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Royal Commission on Matters of Health
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Asbestos in Ontario

LIVING WITH CONTRADICTIONS:
HEALTH AND SAFETY REGULATION AND
IMPLEMENTATION IN ONTARIO

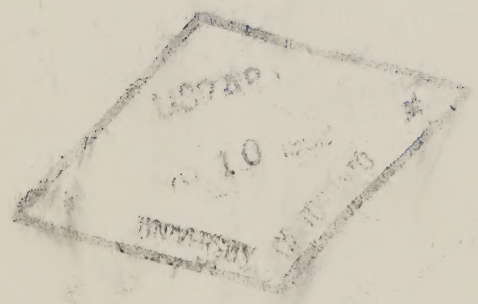
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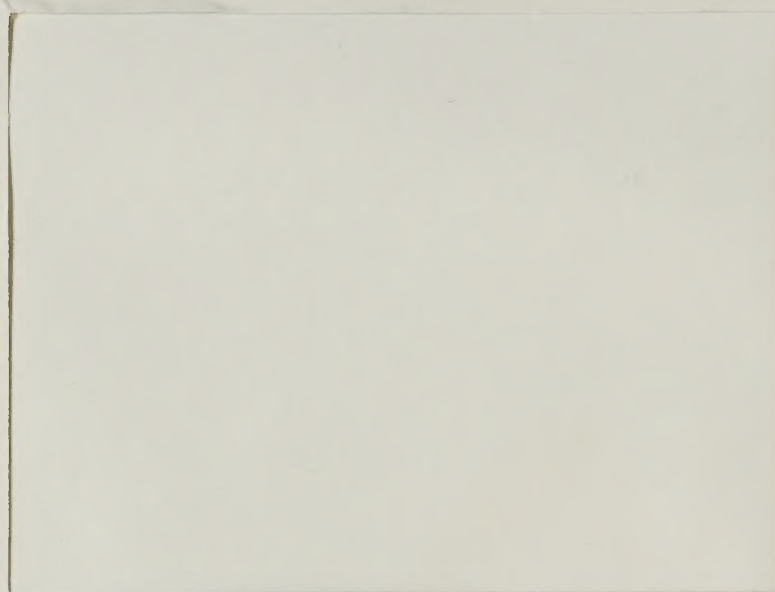
G. Bruce Doern

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Study Series





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IMPLEMENTATION IN ONTARIO**

A Study Prepared By:

G. Bruce Doern

Michael Prince

Garth McNaughton

for

The Royal Commission on Matters of Health and Safety

Arising from the Use of Asbestos in Ontario

* * * * *

This study was commissioned by the Royal Commission on Asbestos, but the views expressed herein are those of the authors and do not necessarily reflect the views of the members of the Commission or its staff.

February 1982

LIVING WITH CONTRADICTIONS:
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A Study Prepared By:

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and Garth McNaughton

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for

The Royal Commission on Matters of Health and Safety
Arising from the Use of Asbestos in Ontario

February 1982

Preface

Many individuals have assisted the research and final preparation of this study either through granting us interviews or through helpful comments on earlier drafts. We are indebted to them. Special thanks are due to Martha Roxburgh, Vi Tansley, and Linda Norris for secretarial and administrative support, and to Linda Kahn and the staff of the Royal Commission on Asbestos for arranging the interviews and the other many necessities of any research task.

We accept full responsibility for any remaining weaknesses in the study.

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INTRODUCTION

Most Canadians have little inclination or incentive to want to understand in any serious way the murky world of standard-setting, implementation, and enforcement in any public policy field, let alone that of health and safety, or toxic and other hazardous substances. A thick report on such a subject carries with it about as much excitement as would a unison reading of the city telephone directory. To most persons it is a world populated by bureaucrats, lawyers, inspectors, experts, and public interest groups, all more or less dutifully performing their tasks with the normal human mixture of competence and incompetence. It is unlikely that most Canadians would view it as a world in which grand issues of principle are continually at stake or in perpetual conflict.

To understand the world of standard-setting, implementation, and enforcement (and to read this study) one must appreciate, and have a high tolerance for, both the detail or minutiae of regulation and the important political, economic, and technical ideas and principles involved. Those actively involved in this regulatory world are rarely prepared to acknowledge publicly that theirs is a world of contradictions. We have titled this study "Living with Contradictions" not to imply that regulation in this field has no rhyme or reason or that it produces no desirable change in human behaviour, but rather to draw immediate attention to the pervasive importance of the conflicting values, principles, and processes at stake, and to the fact that many of the contradictions cannot be resolved in any final sense but can only be balanced or managed within certain limits.

All too easily the words "implementation and enforcement" suggest an image of reliable, predictable occurrences and of routine. But implementation is often better and more accurately viewed as a phase of political life where those who "lost" at time "A" (when the law or regulation is approved) try to recoup or limit their losses, or even "win," at time B, C, D etc. (the much longer time period when implementation occurs). The world of implementation and enforcement is less one of routine and much more one of bargaining, persuasion, coaxing, cajoling, in a myriad of unique cases, circumstances, and physical situations.

The purpose of this study is to shed some light on standard-setting processes, implementation, and enforcement in health and safety regulation, with the focus on Ontario. We examine both ideas as well as details since both are part of regulatory reality. The study is premised on the strong belief that although reform is badly needed, those who seek further reforms in this field should understand reality first. This need applies with equal force both to those whose instincts for reform lean toward more government intervention (e.g., "more standards," "tougher enforcement") and to those who espouse market solutions (e.g., deregulation, a "guidelines" approach, non-regulatory incentives, or "do nothing").

We hasten to stress that this is not primarily a study of the regulation of asbestos. Asbestos is one hazard among many and hence its regulation is best understood in a broader context. At the same time, we will deal with asbestos regulation on several occasions, especially in Chapter 4.

The terms of reference for the study are also limited by, and should be read in the context of, other studies conducted for the Royal Commission. These include studies of the processes of hazard identification; the views of major institutions; the role of collective bargaining in occupational health and safety practises in the workplace; and technical and measurement problems in regulating hazards.

This study should in particular be read in relation to the two others prepared by the authors. Our work has been divided into three reports because of the scope of the material covered but each deals with closely related aspects of health and safety regulation. The first study, The Politics of Risk: The Identification of Toxic and Hazardous Substances in Canada, deals with the front end of the regulatory process. It examines how hazards have been identified in both a political and technical sense as well as how such hazards might be more rationally identified, especially given the formidable future agenda of hazards. It reviews in some detail the way in which the recent issue of Asbestos in Ontario Schools was "identified," technically and politically. It also reviews recent largely unsuccessful efforts by governments to be more systematic in identifying and dealing with hazards. Among the institutions involved in identifying hazards, the study focuses in particular on the role of politicians, the media, and scientists.

It is in part an arbitrary exercise to try to separate the early identification stage from the later stages of actual regulation. This is why in the final analysis the study of identification should be read alongside the present study. A separate study of identification was viewed to be desirable, however, particularly because the identification process had received little systematic attention and was an important problem regardless of what happened in the later regulatory stages.

The second study by the authors which is closely related to this one is "Standard-Setting and Implementation in Ontario: The Views of Major Institutions." This study surveys the views expressed by business, labour, public interest groups, and scientists and professionals about selected issues in the standard-setting and implementation process in the health and safety field. Because it is a study which takes an "inventory" of views and is therefore less analytical, it is not a formal published study of the Royal Commission on Asbestos. It can be obtained from the authors.

The issues examined include: the role of technical information; the question of who should bear the burden of proof; the role of cost-benefit analysis; the role of public participation; the role of inspectors; the adequacy of present compliance philosophies; the role of prosecutions; and other related matters important in the standard-setting and implementation process.

The views are based primarily on submissions to the Royal Commission on Asbestos and interviews conducted by the authors, but include other published literature. The study attempts to report accurately and faithfully these institutional views. Of particular importance are the views of labour unions which have taken the most active interest in health and safety issues, especially those involving the workplace. The highlights of these views are also reported in the present study. The reader will find the more detailed treatment of these views in the study of institutions. In the present study we "fold in" these institutional views in our analysis of the three sectors of health and safety regulation, the environment, the workplace, and buildings.

This study is based on several sources of information and data. These include the extensive published literature on regulation in health and safety matters; briefs and testimony presented to the Royal Commission on Asbestos ; over eighty interviews conducted by the authors on a confidential (not for individual attribution) basis with regulators (headquarters and field personnel), businessmen, officials of unions and public interest groups, journalists, medical and technical experts; and aggregate expenditure, personnel and inspection data provided by the Ontario Ministries of Labour and of the Environment.

Needless to say, any study of this scope has its inherent limitations. Even though we ambitiously cover in considerable detail three large sectors of health and safety regulation -- environmental, labour, and buildings (the so-called "internal" environment) -- we still leave out a large number of other health and safety sectors (and departments). For example, if one was to envisage a mythical "department of hazardous substances" or a truly comprehensive study of health and safety regulation, implementation, and enforcement, one would have to include federal and provincial agencies dealing with health, consumer protection, mining, transportation, and agriculture, not to mention special bodies such as those involved with radiation. In addition, to do full justice to the political reality of regulation one would have to include other departments of government whose task is to promote many of the same industries being regulated by health and safety ministries. Some of the links to these other sectors will emerge in our analysis but only in brief and cursory ways. Our decision to focus on the environment, labour, and building sectors of health and safety regulation presented more than

enough difficulties in the conduct of our research and in the writing of this study. We are confident, however, that the three sectors chosen are sufficiently representative of health and safety regulation, both at the level of ideas and principles and at the detailed operating levels, to enable this study to contribute to a better understanding of the regulatory world.

A further limitation which the authors had to grapple with is the relationship between regulating toxic or hazardous substances and so-called traditional safety issues. Toxic substances are the focus of recent concern. There are reasonable grounds to believe that they present a different kind of problem, especially since scientific knowledge is often less certain and adverse health effects have long periods of latency before they appear or are recognized. Where possible we will take particular note of this class of hazard. On balance, however, it quickly became evident to us that such hazards will not in the final analysis be regulated de novo, so to speak. Rather, they are appended to the existing apparatus, ideas, and agencies of health and safety regulation and hence must be understood in this context. Throughout the study there are numerous instances where the difficult task of differentiating toxic substances from other kinds of health and safety concerns will be evident.

The study is organized so that several different perspectives are taken of the standard-setting, implementation, and enforcement practices. Though our focus is on the Ontario government, we refer to practices at the federal level, and in other countries where appropriate. Chapter 1 presents a general discussion of the nature of regulation, implementation and enforcement and of the principles and ideas embedded in

them. The next three chapters are devoted to an examination of recent and current practices in the three sectors, the environment (Chapter 2), the workplace (Chapter 3), and buildings (Chapter 4). The study of the buildings sector, which involves both workers and the transient public, focuses on a case study of the control of asbestos in Ontario schools. Finally, in Chapter 5, we offer several concluding observations and recommendations for reform.

C H A P T E R 1REGULATORY PRINCIPLES, PROCESS, AND PRACTICE:LIVING WITH CONTRADICTIONS

Ideally governments regulate with a view to changing human behaviour in desired ways. It is often the case, however, that regulation is advocated by different interests as a way to prevent change and to sustain the status quo. To the extent that the overall purpose is to change behaviour it should not be surprising that underlying the contradictory views of, and values embedded in, health and safety regulation, are different models of, and assumptions about, human behaviour and motivation.¹ It is ultimately pointless to inquire into health and safety regulation, implementation, and enforcement without this fundamental appreciation. Regulations and the regulatory process deal first and foremost with ideas about behaviour. The so-called practical world of ongoing implementation cannot escape them.²

Consider the following range of views of regulation in the health and safety field encountered in the course of interviews conducted for this study:

- "What we need is real enforcement of existing regulations and standards and that means putting a few corporate executives in jail."

- "Everybody seems to think science in this field is certain and exact. It isn't. We haven't even begun to do the necessary research to enable us to act on future toxic substances and hazards."

- "We have too many regulations. Small businesses simply cannot bear the costs of more regulations and the paperwork it requires."

- "You simply cannot run a modern economy with all these rigid rules. We must move towards a guidelines approach."

- "Businesses aren't really bitten by regulations. Professor Hartle said it best. They are merely 'gummed.'"

- "'Cost-benefit' analysis has no place in public decisions when it comes to a worker's health. It's just a way to keep economists employed."

- "I would love to be able to do all the things the public interest groups criticize us for. But where do I get the money and personnel? Tell it to the Management Board."

- "Whatever we do we have got to avoid the procedural nightmare that the Americans have. The only winners there are lawyers."

These views and others were encountered in many different ways during the course of our study. That each captures a certain portion of the truth will be more evident as we proceed. These views are a preliminary capsule reflection of our first task, which is to understand the general nature of regulation, implementation, and enforcement as activities of government and the principles and ideas on which they are founded. Our analysis will be brief and, compared to the rest of the study, conducted at a conceptual level. We make no apologies for dealing with these concepts first at an abstract level, because there is far too strong a tendency to regard ongoing regulatory implementation as a world of reliable predictable routine; in short, as mere administration. Nothing could be further from the truth.

REGULATION AND STANDARD-SETTING

Regulation and standard-setting are not defined or understood in any uniform way either by participants in the regulatory process or, for that matter, in the scholarly literature on the subject.³ For those who take the most catholic approach, regulation is virtually a synonym for governing in that it embraces all the things that the state can do to secure support and compliance for its policies and decisions, including the use of persuasion, the appeal to ideas, the offering of expenditure incentives, taxation, and coercive rules.

Rules of Behaviour and Guidelines

Most persons, however, tend to define regulation in somewhat narrower terms as rules of behaviour backed by the direct sanctions and penalties of the state. Thus, regulation occurs when the more coercive powers of the state are used to back up norms of conduct. In this political sense both statutes or legislation as well as so-called subordinate legislation would be regulatory in nature and would be distinguishable from other instruments of governing such as spending, taxation, or voluntary exhortation.⁴

As we will see in this study, government officials will often use regulation to denote only subordinate legislation; that is, "regulations" which are made pursuant to a parent statute and which go through legally prescribed steps including publication in the federal or provincial Gazette. Standards in the health and safety field are usually viewed by officials as statements arising as subordinate legislation, setting out

upper or lower health and safety limits or setting out procedures that must be followed. In this sense they are rules of behaviour backed up by sanctions which apply if the standards are not met. In our analysis of the Ontario Ministry of the Environment, we will see that the term standards is reserved to this narrower use and an attempt is made to distinguish standards from "guidelines."

As we will explain in greater detail below, guidelines are often viewed to exist because of the presence of greater scientific uncertainty or because it is agreed that there is no threshold limit; that is, a point of measurement within which something is "safe" and beyond which, something is "unsafe." But regulation defined as "guidelines" does not occur purely because of differences in scientific and technical precision. Guidelines also have political and normative qualities which many groups prefer.

Strict regulations (rules of behaviour) and standards carry with them the notion of equality of treatment and equality before the law, a powerful and important value in Canada and in other western societies. Guidelines, on the other hand, suggest flexibility and a capacity to recognize that circumstances and situations are different or unique. Both of these combine to suggest a defence of fairness and equity, also powerful and important values.

As if these distinctions were not confusing enough to the layman, they do not complete the picture. The fact is that "standards" are often in reality applied flexibly and "guidelines" are often obeyed as if they were standards.

As in so many other aspects of political life, language and the use of words, though rarely clear, matter a great deal. In the words "regulation," "standard," and "guidelines," we have code words for two closely linked but overriding values of democratic society. We are enjoined simultaneously to treat people in equivalent situations equally and to treat people who are not in equivalent situations unequally (that is, to be fair and reasonable). Both of these ideas are equally desirable and, in a broad sense, form a consistent philosophical and democratic concept. In practice, however, they are often in conflict.

Regulations, standards, and guidelines (and therefore implementation and enforcement) embrace both reliable, predictable behaviour and unreliable, unpredictable, unique circumstances. They involve implementing rules, but equally they involve a series of numerous discrete bargains and discretionary decisions.

Scientific and Technological Factors and Ideas

In the broad realm of health and safety regulation, standard-setting and guidelines involve processes and outcomes complicated still further by scientific and technical factors and by the problems of establishing causality in both the natural science sense (does hazard X produce health effect Y?) and the social science sense (even if we know that a hazard exists, what is the best way to get A to change his behaviour to avoid hazard X?). The temptation to use stereotypes when dealing with scientific and technical variables in health and safety regulation is very attractive but ultimately self-defeating and illusory.⁵ Embedded within

phrases such as "regulation is technically complex" or "scientists only want to do more research" are some important concepts which must be understood and which will not disappear, especially as one enters the world of regulating toxic substances. We think it is essential to draw immediate attention to several of these concepts.

We have already briefly alluded to one of them in our discussion of guidelines. In the health and safety field guidelines seem, by definition, to be tentative rules where scientific uncertainty is greater, or scientific controversy is present.⁶ This, in turn, could involve important questions of whether there is an exposure limit for a particular hazard. If there is some agreement among scientists that one exists, then a standard might be promulgated. If there is no agreement, then the situation can lead to a variety of proposed solutions, including regulations to ban a substance's use, to require exposures to be reduced to the lowest practicable level or to do nothing.

The existence of exposure limits per se is not the only scientific issue that might arise. Frequently, judgements turn on the nature of the dose-response relationship between the amount of the hazard and its effects (both in general and its effects on particular organs of the body, or on persons depending upon their sex, age and state of health). Is the dose-response linear in nature or does it take on some other characteristics?⁷ Controversies also exist over possible multiple causal relationships, for example, between smoking and a particular hazard, and over the existence of natural background levels of a substance already present in the environment.

In addition to scientific issues concerned with causality there are often genuine technical issues concerning the physical problem of measurement. Is the right fibre being measured, and is it distinguishable from other fibres present in the air?

In recent years, especially as concern over toxic substances and carcinogens has grown, controversy has arisen over the validity of animal tests; over the need for other corroborative evidence to prove that a hazard exists; and over the burden of proof. Does the burden fall on those who must prove that something is safe, or that it is unsafe? These concerns can conflict with legal norms, including the assumption of innocence until proven guilty.

That these scientific and technical arguments and ideas can be used and exploited by all parties is evident. They are yet another source of the contradictions inherent in health and safety regulation. They allow groups to simultaneously urge the need for both less research ("action not research is necessary") and more research (about the host of new chemicals now being introduced into workplaces and markets). They evoke simultaneous concern for the free dissemination of research and data and for its suppression (e.g., doctrines of commercial privilege, and opposition to easier access to medical records and personnel files for medical research purposes).

Entire frameworks or paradigms for regulation also emerge from scientific and technical issues. In Chapter 2 we discuss the different Ontario and federal frameworks for regulation. Ontario has adopted a regulatory approach based on a "point of impingement" framework rather than regulation at the "source" of the contaminant, the approach preferred by

the federal government. The former takes into account the transportation of a contaminant in the ambient air and hence is viewed by Ontario to be technically superior. It is, moreover, more flexible. It does not carry with it the federal regulatory corollary which requires firms to use the "best available practicable technology." As we will see in Chapter 2, this concept, which otherwise flows from a technical consideration, just happens to have economic and political attributes as well which are preferred in various ways by different regulatory authorities and regulated interests.

Perhaps the most important and contentious example of the scientific and technological attributes of health and safety regulation can be found in the American debate over the Occupational Safety and Health Administration's (OSHA) Cancer Policy, an important issue to be dealt with again in Chapter 3. It deserves a brief introduction in the context of our general review.

The OSHA policy on carcinogens was initiated in 1977 as a draft and finalized in January 1980. In announcing the final policy, Eula Bingham, then Assistant Secretary of OSHA, pointed to the central dilemma:

...in the nearly nine years OSHA has been in business, it has been able to issue final regulations at an average rate of only about two per year. With several thousand potential carcinogens in America's workplace, we clearly faced an impossible task at this rate.

One of the major factors inhibiting the issuance of regulations to control workplace carcinogens has been the need to cover the same ground in each and every rule-making proceeding. We found ourselves debating the same questions of appropriate testing and interpretation for each carcinogen we investigated. So, one of the major purposes of the cancer policy is

to avoid this reinvention of the wheel - to say in one policy statement what our criteria are for classifying carcinogens. What we have done is to decide, for regulatory purposes, how we will deal with certain types of data and studies in determining whether a substance is carcinogenic.

...it will permit industry to forecast far more accurately than in the past what our probable actions will be in dealing with particular toxic substances. This should permit much greater anticipation on the part of industry and encourage voluntary compliance even before we have taken official action.⁸

The OSHA Cancer Policy establishes a system for identifying and classifying carcinogens based on the nature and extent of the scientific evidence of their cancer causing potential. It also provides a standard-setting procedure that will guide further OSHA regulatory activities, including the annual publication of a "candidates list" of potential occupational carcinogens.

There are three central elements to the OSHA plan:⁹ (1) the classification of suspect carcinogens into two categories, each subject to different specific compliance concepts; (2) the treating of certain scientific questions as "resolved" and hence not subject to challenge in a rule-making proceeding; and (3) the setting of strict time limits for the different stages in rule-making, including a six-month overall limit from proposal to final rule.

A Category I listing occurs when there is positive epidemiological evidence in humans, or positive results from a single long-term animal test confirmed by a "concordance" with other evidence. Concordance may be supplied by "short-term" tests of mutagenic action, such as in mammalian cell cultures or bacteria, or by other "suggestive" animal evidence. A Category II listing occurs for those chemicals where an animal test is only "suggestive" or where concordance is lacking.

It is important to stress that the strength of scientific evidence is the only basis for a listing in either category. Other criteria, such as number of potentially exposed workers, can only be considered in ranking substances within each category.¹⁰

The policy specifies that worker exposure to Category I carcinogens will be reduced to the lowest feasible level, primarily through engineering and work practice controls (not personal protective devices). This is based in part on the finding that there are no known means of establishing levels for carcinogens below which there would be no risk to workers. Exposure is to be reduced to zero if "suitable substitutes" exist. Worker exposure to Category II carcinogens will also require exposure reduction but the level will be determined on a case-by-case basis.

OSHA will also publish in the Federal Register, at least every six months, two priority lists for further scientific evaluation and possible regulation. The list will be based on the existing "candidates" list, or on information or petitions from other sources. Each list will contain approximately ten substances, one list for Category I rule-making and the other list for Category II rule-making.

The policy also enables OSHA to request at any time that the heads of the National Institute for Occupational Safety and Health (NIOSH), the National Cancer Institute (NCI), and/or the National Institute of Environmental Health Sciences (NIEHS) convene a scientific review panel. Such panels "are to consist of appropriately qualified individuals in the disciplines relative to the issues to be considered and are to include only government employees."¹¹ Panels are required to submit findings within 90 days; otherwise OSHA may proceed on its own to make a determination.

While the OSHA Cancer Policy is now in place, its actual operation is very much dependent upon both judicial review and the new "anti-regulation" philosophy of the Reagan Administration.¹² For example, in 1980, in a five to four vote, the Supreme Court struck down OSHA's stringent regulation on benzene primarily because OSHA did not provide sufficient evidence of the regulatory benefits of the new standards.¹³ The decision did not deal directly with the central question of "whether the benefit of a regulation, as deduced from the magnitude of health risks, must be balanced against the cost of compliance."¹⁴ It did, however, challenge OSHA's strong preference to use the scientific evidence of risk as its primary criterion, a central feature of the Cancer Policy.

A later Supreme Court decision in June 1981, involving cotton dust, appears to strengthen OSHA's position. The Court declared in broad terms that the benefits of new rules limiting exposure to cotton dust should not be measured against the costs. The Court held that regulations must be feasible but the only constraints on feasibility were whether a standard is scientifically achievable and whether its costs would be so prohibitive as to jeopardize the economic health of the industry.

The Reagan Administration will undoubtedly put its imprint on the OSHA policy. Thorne Auchter, the new Director of OSHA, has stressed that review and revision of current OSHA standards is a higher priority than new initiatives.¹⁵ For example, he has withdrawn a requirement for the labelling of toxic chemicals in the workplace. The development of a list of priorities to be considered under the OSHA Cancer Policy, which itself will be revised, is a low priority. A planned reduction in personnel will also slow down the regulatory process, especially in this aspect of OSHA's work.

We will, of necessity, return to all of the foregoing contending ways of defining regulation in the health and safety field later in this chapter when we examine principles and criteria in detail. In the meantime, it is necessary to link this general view of regulation with a similar general discussion of the meaning of implementation and enforcement.

IMPLEMENTATION AND ENFORCEMENT

Implementation is defined for the purposes of this study to include all activities by government involved in applying regulations with a view to securing the desired change in behaviour or in conditions. It therefore embraces a wide range and variety of activities and actions, which for purposes of presentation can be seen to be situated along a continuum characterized by minimum or non-existent coercion at one end and higher degrees of coercion at the other. Thus implementation involves:

- information dissemination activities;
- public meetings and seminars;
- training and education;
- collecting information on a voluntary basis;
- collecting information on a compulsory basis;
- requirements to notify authorities of certain plans or actions;
- requirements to approve proposals;
- research and analysis;
- monitoring and measuring;
- inspecting;
- issuing orders;
- following-up on orders to see if they are obeyed;
- fining;
- revocation of approvals/licences;
- prosecutions.

Evaluation of these implementation activities could occur at any point along the continuum or could embrace the program as a whole. We will point out in each chapter some of the difficulties in evaluating regulatory success, especially given the absence of suitable data.

Public and Private Behaviour

In this study we cannot possibly cover all of the above activities in all three sectors chosen for analysis (environment, labour, and buildings). It is our intention, however, for reasons already outlined, to present a searching look at major aspects of the world of implementation primarily because it is often so little understood. We will portray it as a world in which politics and discrete bargains are very much present and are usually necessary.

It must be stressed, however, that a full appreciation of the world of implementation can rarely be achieved by looking only at what public officials do or say they do. Implementation and ultimate compliance with standards and guidelines are also almost always a product of private perceptions as well as private behaviour and action taken in response to, or in anticipation of, official actions. For example, in this study we do not deal with activities such as the initiatives of citizens including their reporting of infractions or taking private legal action. We only touch briefly in Chapter 3 on the role of labour-management health and safety committees in the workplace, a mechanism important for securing a form of self-regulation or self-compliance.¹⁶ We do not deal with voluntary standards and codes including those developed by professional

bodies and associations whose rules of conduct are not officially promulgated by the state but many of which are nevertheless "obeyed" and hence "implemented."

This private world of implementation is an important one because most activities of government can only be effective through a co-determination of services; that is, citizens and interests taking some kind of action (calling the police, or picking up a brochure, or calling in to complain, etc). Ultimate compliance with regulations and guidelines is almost invariably a mixture of co-determined public and private behaviour and a mixture of persuasion, enlightened self-interest, and fear of the consequences of misconduct.

Consider first a simple everyday example of compliance, namely obeying a traffic signal on a city street. We obey for a mixture of reasons, including internalized knowledge about the consequences for our personal safety (being hit by another vehicle); fear of the police being present, or that the police may be present at the scene; and positive belief in the value of traffic lights and in the citizen's responsibility to obey the law.

While there is obviously a world of difference between traffic lights and toxic substances in terms of what the "signals" for behaviour mean, the simple traffic metaphor is nonetheless a generally valid one when it comes to understanding important features of the reality of implementation, enforcement, and overall compliance.

Compliance Philosophies

In the three sectors examined in this study we encounter a range of characteristics which produce different approaches to implementation or what could be called compliance philosophies. We discuss these in some detail in Chapters 2, 3, and 4. In the workplace sector, we see a compliance philosophy focused on the "internal responsibility system" of labour-management relations within the firm. Its ultimate objective is ideally to achieve "ethical compliance." Government inspectors are, in theory, a third party to the process.

In the environment sector, a compliance philosophy has been less explicitly developed. There is a strong preference for the use of persuasion rather than prosecutions but there is no equivalent in this sector to the triumvirate of institutions available for "policing" the workplace sector (labour, management, and government). In the environment sector, the fundamental relationship is much more a bilateral one between inspectors and the industry, company or establishment concerned. Public interest groups do not constitute a permanent presence in compliance activity.

In the building sector, we encounter still other circumstances which produce a different compliance philosophy. It is different first because it is (in the realm of toxic hazards at least) a relatively new sector for regulatory attention. It therefore has an even less developed compliance philosophy than the other two sectors. Second, because of the "temporary" nature of many building construction and demolition sites, regulatory authorities and interests are moving towards a "control by procedures" approach. This means that one cannot simply specify a

standard and then inspect a facility periodically. One must specify detailed procedures and police them aggressively and with great frequency. Thus, in this instance, the physical and, above all, temporal characteristics of the activity alter the value of relying as much on persuasion as one might in other regulatory sectors in the health and safety field.

The analysis will show, therefore, that it is quite unrealistic to view the implementation of health and safety regulations through the prism of simplistic "laws and cops" model of human behaviour. This does not mean that tough visible enforcement is unimportant, for clearly it can be. The point we stress is that implementation includes far more than the coercive end of the continuum of public activities.

Implementation and Organizational Concepts

Implementation is also influenced by conflicting organizational concepts inherent in many of the activities involved in regulation and implementation, including delegation, co-ordination, independence, and regionalism. First, the nature of cabinet government, reinforced by the natural human limits of administrative span of control, means that the numerous tasks of health and safety regulation must be apportioned among different ministers and delegated in turn by these ministers to their officials. Ministers must be held accountable by legislative bodies for their actions and inactions. Persons and interests wanting to acquire health and safety from the state do not enjoy the convenience of "one-stop shopping." There is no "department of hazardous substances," nor could one expect there to be, given the other valid purposes of the

several departments that perform health and safety functions. Even if there was one department, it would merely mean that similar problems of "co-ordination" which are now interdepartmental would continue to exist to some degree within a vast single department. Therefore, even though the physical path and characteristics of hazards are closely interconnected in the environment, labour, buildings, transportation, and other sectors, political and administrative factors necessitate their delegation and compartmentalization, at least to some significant extent.

While there are no pat answers to the co-ordination problems, our analysis shows that such problems are very real in the Ontario government. The focal point of interministerial co-ordination is the Deputy Ministers' Committee on Occupational and Environmental Health which reports to the Cabinet Committee on Resources Development, one of the Ontario Cabinet's policy field committees. The Chairman of the Deputy Ministers' Committee is the Deputy Provincial Secretary for Resources Development. The Committee is composed of the deputy ministers of such ministries as Health, Natural Resources, Environment, and Labour, but other ministries are involved periodically. These include Consumer and Commercial Relations, Energy, and Intergovernmental Affairs.

The Committee was established in 1976 in the wake of the Ham Royal Commission on the Health and Safety of Workers in Mines in Ontario. It was the vehicle through which the re-organization of several ministries occurred (see Chapter 3) to improve the regulation of occupational health and safety. Since then, the Committee has met once a month on average. It has dealt with a number of issues involving interministerial concerns, including uranium mine exposure at Elliot Lake, radon gas in homes, air

quality in homes, low level radioactivity, the response to the Royal Commission on Asbestos, and pesticides. The Committee's task is often one of defining the problem more clearly. Over seventy-five percent of the Committee's recommendations go to the Cabinet Committee on Resources Development.

There is no clear definition of the Committee's mandate or what triggers its involvement. It does not, for example, automatically become involved in the approval of proposed new standards for a particular hazard or product or in setting priorities for dealing with hazards. There are always matters of degree as to how much activity can be centrally co-ordinated and how much should be delegated. At this point we simply take note of the Deputy Ministers' Committee and its general role. We will examine it again especially in Chapter 5.

Many persons and interests involved in the regulatory process strongly advocate, as a matter of principle, the need for a health and safety equivalent to the constitutional doctrine of the "separation of powers." This occurs in various ways and in different combinations. For example, some argue that the research function or activity should be separate from, and independent of, standard-setting and hence located in separate agencies or departments. We have made this argument as a matter of principle in the study on hazard identification where a new research agency is recommended. Others similarly believe that standard-setting should be separated from implementation and enforcement. These values suggest that some persons give a higher preference to independence and the appearance of independence. At the same time, many of the same persons will bemoan the lack of "co-ordination," a condition encouraged by organizational

separation, at least to a certain extent. Once again, it is not difficult to show how ostensibly harmless dry "administrative" words such as delegation and co-ordination become code words for important but sometimes conflicting principles, each of which separately is highly valued and quite easy to defend.

Implementation always involves, in addition, a geographic or spatial dimension. Regions are different and these differences must be taken into account. Easy and ready access to services or inspectors are important for effective and responsive, though not necessarily efficient, implementation. Thus, important values are at stake in the location, development, operations, and degree of decision-making powers of field officials.

Implementation is affected by the career system and organizational environment in which inspectors function. For example, most inspectors are located in the field, often in lower paid salary brackets. Headquarters is often viewed by field personnel as a remote world populated by "staff" personnel who think up new things for field inspectors to do without ever having to do them themselves. There is a strong tendency for field personnel to keep headquarters at arm's length and to focus on what they know best. This usually means having to develop a comfortable but not too cosy relationship with the industries, institutions, or persons they are regulating in the field.

In the meantime, headquarters, too, is under its own implementation pressures. These pressures range from central agency insistence that the deputy minister produce "evaluations" of how his operations are meeting their program objectives to questions from the media or in the legislative question period on why a particular "hazard of the week" is not being dealt with properly.

We will see that these headquarters-field office relationships, in combination with the issues raised above, result in quite different patterns in the flow of information in the three regulatory sectors we explore.

PRINCIPLES, VALUES, AND CRITERIA

We have already acquired in our general discussion of standard-setting and implementation a considerable list of principles, values, and criteria. All of them in isolation are desirable. At any given point in time they must be explicitly or implicitly ranked or at least balanced in some ultimate political way. To a certain extent there will, however, always be contradictions among them. Thus far our list includes:

- equality before the law (that is, treating people in similar situations equally);
- fairness and reasonableness (that is, treating people in dissimilar situations unequally);
- belief in scientific methods and the need to determine reasonable causality in an open way;
- the need for more independent research;
- the need for less research and more action based on what we already know;
- the need for freedom of information;
- the need for suppression of information to protect commercial privilege and confidentiality of medical records;
- the need for persuasion and support;
- the need for tough enforcement;
- the need for regional and local sensitivity and responsiveness;
- the need for central co-ordination;
- the need for focused ministerial accountability;
- the need to separate the research function from standard-setting, and/or implementation from both.

Even the above list does not exhaust the normative dimensions of health and safety regulation and implementation. Other overriding concerns must be addressed. This is best achieved by reviewing briefly recent arguments and developments in the field of social regulation.

Social Versus Economic Regulation

Several authors and reports have attempted to differentiate social regulation from economic regulation.¹⁷ The latter is the older familiar form of regulation. It is specific to a particular industry (e.g., communications, transportation, energy) and focuses on regulating entry to the industry, ownership, rates of return, and sometimes prices. It is "economic" because government intervention was in part at least, premised on the need to overcome market imperfections such as monopoly and oligopoly. It was originally the product of the criticism of capitalism by liberal progressives early in this century and of a desire to "restore" competitive forces or at least prevent things from getting worse. Regulators in these sectors were later usually accused of being captured by the industries they were intended to regulate.

Social regulation, on the other hand, is a more recent phenomenon, primarily a product of another phase of liberal criticism of capitalism in the 1960s and early 1970s during a period of economic prosperity. Social regulation cuts across industries and deals with "health, safety, and fairness." Thus it intervenes even more directly in the production technology and processes of firms and in their marketing practices. The

volume of environmental, occupational health, and consumer product regulations increased markedly.¹⁸ In terms of economic theory, the state is supposedly intervening because of the need to deal with externalities or the effects of market transactions on third parties. Social regulators tended not to be as easily "captured" since there were several industries among their industrial clientele. Moreover, particularly in the U.S., they seemed to pursue their regulatory tasks with considerable missionary zeal.¹⁹

Since the mid-1970s, during a period of economic malaise, social regulation in particular has become a target of conservative political interests in both the United States and Canada. In this respect it became merely one of many targets as interests and experts sought to discover the causes (and perhaps the villains) of high inflation and sluggish economic growth. To trace the evolution of this criticism and its effects on standard-setting and implementation, it is necessary to appreciate the existence of two broad phases of social regulation in the 1970s.

During the first phase, social regulations required private firms (especially in the environmental and occupational health fields) to undertake major capital-intensive investments and expenditures.²⁰ In general, (although even here there is dispute) this first regulatory wave produced a quantum jump in environmental improvements. However, as the second phase of regulation-mandated capital investments was being proposed in the mid 1970s, circumstances were different. First, economic times were much more difficult, but equally important, the second wave of capital-intensive regulation could only produce, so it was argued, much smaller marginal gains in health and safety. Critics argued that social

regulators were being unreasonable; they reached for the heavy regulatory guns when other solutions might be more useful and more cost-effective as well.

The issue which perhaps best symbolized this line of argument was the frequent dispute over the use of masks in occupational health situations. Masks were much less expensive than installing new production processes and hence were preferred by employers. Regulators, pressured by labour unions, argued that by focusing on masks the responsibility for the hazard was being placed on the worker. Besides, they argued, it was impossible to implement such a control program. There were thousands of workers and hence enforcement was impossible. There were many fewer firms, therefore one could monitor them more easily for compliance purposes. In short, it was more appropriate to change production technologies.²¹

Nothing illustrates more distinctly the close connection between political ideas, economic costs, assumptions of human behaviour, and the real world of regulatory implementation than the case of the dispute over workers' masks.

As the search for solutions to the economic malaise continued in the late 1970s, social regulation became more intensely scrutinized. This began first in the United States where regulators were required in 1975 to prepare inflation impact statements for proposed regulations. Studies also began to appear outlining the annual and aggregate private sector costs imposed by social regulation and its effects in lost production and jobs. An anti-regulation movement became a part of the larger anti-government ethos which culminated in the election of the Reagan Administration, a regime bent on reducing spending, taxes, and regulations.²²

The Canadian version of this general line of argument followed somewhat later and in more muted tones, but it occurred nonetheless.²³ During the period of wage and price controls, between 1975 and 1978, the committee of ten federal deputy ministers (DM 10) launched the initial trial studies which led to the adoption of the federal Socio-Economic Impact Assessment (SEIA) process (described below) in 1978. The Progressive Conservative Premier of Manitoba, Sterling Lyon, easily persuaded the First Ministers' Conference of 1978 to launch a major study by the Economic Council of Canada into regulation (social and economic). In 1979, the Ontario government began its own deregulation and regulatory review program. In 1980 and 1981, a special Parliamentary Task Force on Regulatory Reform held meetings and issued its report.²⁴ The politically weaker nature of the Canadian regulatory reform process can be seen by the fact that the Economic Council's study generally advocated a form of deregulation in several sectors but advocated stronger regulatory action in social regulation fields.²⁵

Socio-Economic Impact Assessments and the Vetting of Regulations

In terms of regulatory decision-making within government, the regulatory reform debate has produced some differences in the formal decision process. The federal SEIA process was launched by Cabinet directive in August 1978.²⁶ It applies to "major" new proposed regulations in the health, safety, and fairness field under 16 specific federal statutes. "Major" regulations are understood to be those which are likely to impose private sector costs in excess of ten million dollars. Proposed regulations imposing lower costs are exempt from the SEIA process.

Under the SEIA process federal departments are required to prepare and publish, for comment by affected parties, a socio-economic impact statement on the likely costs and benefits of the proposed regulation. There is no requirement, if costs exceed benefits, that the regulation cannot proceed. Rather, the intent is to produce more systematic "second sober thoughts" and to consult interests more formally and deliberately. Only a few proposed regulations have gone through a full SEIA cycle since 1978 and hence experience with the process is very limited.

In the Ontario government, the guidelines issued for the preparation of all Cabinet documents and proposals require that they be accompanied by an economic impact assessment. Interviews conducted for this study suggest that such assessments are done with widely varying levels of enthusiasm, thoroughness, and competence.

It should be stressed that these recent features of the regulatory decision process have been added to the existing apparatus for processing regulations. Both the federal and provincial governments have regulations or statutory instrument statutes.²⁷ These acts require that all formal regulations (subordinate legislation), but not necessarily all "guidelines," be vetted by a registrar or similar official. These assessments are based on such tests as whether the regulation flows properly from the enabling powers of the parent statute; whether it contravenes a bill of rights; whether it imposes a tax; and other similar concerns.

One should also not lose sight of the fact that the normal informal processes of cabinet discussion, ministerial and official telephone calls, and behind-the-scenes communication are also a part of the regulatory decision process. Indeed, one could argue that the greater the

effort to formalize regulatory decisions in the written mode through SEIA processes and the like, the more important verbal communication, bargains, and understandings might become.

While the formal ex ante evaluations are fairly new, they do raise in explicit ways the controversy over regulatory criteria in the health and safety fields. Labour unions tend to oppose the use of cost-benefit and other economic analyses in the health and safety field.²⁸ They argue that health criteria should be the only criteria recognized. While we believe that this argument has validity when initially identifying hazards,²⁹ we believe it flies in the face of reality when it comes to the actual standard-setting and implementation phases of regulation. This is because, even if formal cost-benefit assessments are not present in public regulatory politics, they are certainly present, albeit in a rough and ready way, in existing private, or behind-the-scenes, regulatory politics. The role of cost-benefit analysis and of the closely related issue of who bears the burden of proof will be examined again in Chapters 2, 3, and 5.

The choices and hence the politics of health and safety regulation cannot even be limited to health effects versus economic efficiency. Regulations usually create new markets and hence new opportunities. This is apparent in Chapter 4 where the asbestos removal program in Ontario schools created a new twenty million dollar market for the construction and asbestos substitute industries. Thus, stability of income and the distribution of income became normative concerns regardless of the formal rules of regulation.

Redistribution (from rich to poor or vice versa) is also an important value in social regulation, especially since many workers are in lower income brackets and since persons in low income brackets are usually located closer to industrial polluters since they cannot afford to live in cleaner suburbs.

To illustrate further the contradictory pressure of these principles, values, and criteria and to prepare for the detailed analysis to follow, two further examples will be noted briefly.

In Chapter 3 we deal with occupational health and safety. Numerous studies of occupational health and safety agree that there is no accepted theory of accident causation.³⁰ This has not prevented (nor should it) efforts to construct models about such causation. Invariably, these theories are tied both to political belief and to assumptions about human behaviour. For example, recent efforts have been made in some quarters to differentiate a "man at the centre" from a "work at the centre" concept of occupational health.³¹ While there are many nuances to the two concepts, in essence, the former approach says man (the worker) is the problem while the latter approach says that the nature of the work itself is the problem. From these central concepts different regulatory solutions are likely to follow. The example of worker masks cited earlier is partially an example of these differences, since with the first approach, the "solution" is to make workers wear masks, whereas in the second approach, the solution is to change the technology of work.

These models can easily be related to broader political views about the nature of the modern industrial system, capitalism, and the like. So also can our second example, the issue of pollution effluent charges.³² Many economists have argued that a superior way to "regulate" the environment is to charge firms to pollute, hence forcing them to internalize environmental costs. A variety of ways have been suggested but the idea itself, despite its logical nature, has not caught on. This is probably because it is politically difficult to sell the concept of a "licence to pollute." The economist argues in effect that the best way to get polluters to change their behaviour is to use a quasi-market approach. Those who prefer direct regulation and standards seem to opt for changing behaviour by more coercive measures. Both approaches are probably inadequate on their own, especially when it comes to dealing with all the measures and unique features faced by different firms and industries.

Differences Among Countries

In our discussion of principles and criteria, we have already alluded to differences between Canada and the United States in the recent debate over social regulation. Our final and perhaps most elusive task is to note briefly the debate about differences in the approach to regulation among countries. This takes us into the often muddy realm of political cultures and dominant national values or characteristics. There are few good studies of comparative social regulation and thus it is difficult to be conclusive. Perhaps the only generalization we could make is that national differences do appear to affect the design of institutions and

regulatory processes but not necessarily the actual outcome of regulation. For example, Steven Kelman's recent comparative study of regulating occupational health and safety in Sweden and the United States showed quite stark differences in the compliance philosophy of regulators:

Differences in the enforcement systems in the two countries influence both inspectors and the tenor of their inspections. American inspections are designed more as formal searches for violations of regulations; Swedish inspections are designed more as informal, personal missions to give advice and information, establish friendship ties between inspector and inspected, and promote local labour-management cooperation. Since OSHA inspections are intended as searches for violations, their purpose could be defeated were advance notice given. The Field Operations Manual underlines the importance of this point. OSHA's first-instance sanctions system means that even if an employer corrects a violation in front of the inspector, this act cannot influence whether a fine is imposed, a method that contributes to a hostile atmosphere.³³

Kelman relates these preferences to broader attributes of American and Swedish political and social life:

When policy makers choose among alternative control systems, they do so in the context of assumptions and experiences they have as members of their society. They begin with assumptions about how likely it is that individuals subject to a law will comply simply because the law expresses the authority of government. In neither American nor Sweden were occupational safety and health policy makers content with existing levels of compliance. There are, nonetheless, degrees of pessimism about baseline levels of obedience to the law. Out of the Swedish overhet tradition grows the notion that people ought to defer to the wishes of those in authority. Out of the American liberal tradition grows the notion that it is legitimate for people to define and pursue their own goals, independent of what the state thinks is best for them. But the forces of individual interest, once legitimized, are not easily controlled; there always exists the danger

that people encouraged to be self-assertive will fail to see the distinction between doing so when this does no impermissible harm to others and doing so when such harm is done. The traditional problem of European states with established rulers has been to tame those rulers and let people breathe; that of America with its liberal tradition has been to tame the unruly so that other people can breathe.³⁴

Despite these differences in process, and despite the a priori image many have that "socialist" Sweden would be more effective in this field than "capitalist" America, Kelman does not detail any obvious or conclusive evidence about differences in regulatory outcomes.

Similar observations have been made about Canadian-American comparisons. In the nuclear energy field the normative regulatory model in Canada has been described as a professionally closed, trusting, and deferential one in contrast to the open and adversarial nature of the American approach.³⁵ Judgements about which system produces superior nuclear safety are, however, harder to find.

Canadians, including the authors of this study, find themselves constantly ambivalent about these national comparisons, especially Canadian-American ones. These ambivalent views are certainly present in attitudes held by interests about regulatory reform in the health and safety field. On the one hand, many are attracted by the openness of the American system with its greater opportunities for participation, for taking private remedies, and for requiring public officials to act. On the other hand, they are equally repelled by the excesses of the adversary contest and by the perception that it leads only to stalemate and the appearance of action.

By examining the general nature of regulation and implementation, and the numerous contending principles and criteria which inform judgements about whether health and safety regulation is successful, we have sought to highlight the existence of contradictions. Both regulatory processes and purposes generate perpetual normative conflicts.

The mere existence of contradictions has not, will not, and should not lead to the conclusion that change is not possible. It should, however, make it obvious that regulatory change will occur with much continuing disagreement as to direction and as to the degree to which it is being implemented. The detailed analysis to follow will make these realities starkly evident.

NOTES TO CHAPTER 1

1. See Steven Kelman, Regulating America, Regulating Sweden: A Comparative Study of Occupational Safety and Health Policy (Cambridge, Mass.: MIT Press, 1981), pp. 7-8 and Chapter 5 and G. Bruce Doern, "The Political Economy of Regulating Occupational Health: The Ham and Beaudry Reports," Canadian Public Administration 20:1 (Spring 1978): 1-35.
2. Good studies of implementation are rare. See J.L. Pressman and Aaron B. Wildavsky, Implementation (Berkeley: University of California, 1973).
3. For reviews of basic concepts, see Douglas Hartle, Regulation, Public Policy and Decision Making (Montreal: Institute for Research on Public Policy, 1979); G. Bruce Doern, ed., The Regulatory Process in Canada (Toronto: MacMillan Co. of Canada, 1978), Chapter 1, and Economic Council of Canada, Responsible Regulation (Ottawa: Supply and Services Canada, 1980).
4. See G. Bruce Doern, Rationalizing the Regulatory Decision-Making Process: The Prospects for Reform, Regulation Reference, Working Paper No. 2 (Ottawa: Economic Council of Canada, 1979).
5. See G. Bruce Doern, "Science and Technology in the Nuclear Regulator Process: The Case of Canadian Uranium Miners," Canadian Public Administration 21:1 (Spring 1978): 51-82.

6. See Ian Burton and Roger McCullough, eds., Living With Risks: Environmental Risk Management in Canada (Toronto: University of Toronto, Institute for Environmental Studies, forthcoming Spring 1982), Chapter 1 and G. Bruce Doern, The Peripheral Nature of Scientific and Technological Controversy in Federal Policy Formation, Background Study No. 46 (Ottawa: Science Council of Canada, 1981).
7. Ontario Royal Commission on Asbestos, "Address by Dr. David Muir" (Paper delivered at the Second Public Meeting, Toronto, 12 December 1980).
8. Eula Bingham, "Remarks at Cancer Policy News Briefing," (Washington, D.C.: United States Department of Labor, Office of Information, January 1980), pp. 2-3.
9. See Federal Register, Vol. 45, No. 15, Book 2. Tuesday, 22 January 1980, pp. 5001-5296 Part VII, Department of Labor.
10. For criticism of this emphasis see editorial comment in Regulation: AEI Journal on Government and Society 5:2 (March/April 1980): 4-7.
11. Federal Register, op. cit. note 9, at p. 5203.
12. See "Deregulation HQ: An Interview on the New Executive Order with Murray L. Weidenbaum and James C. Miller III," Regulation 5:2 (March/April 1980): 14-23.
13. R. Jeffrey Smith, "A Light Rein Falls on OSHA," Science 209 (August 1980): 567-568.
14. Ibid., p. 567.
15. R. Jeffrey Smith, "OSHA Shifts Direction on Health Standards," Science 212 (25 June 1981): 1482-1483.

16. See Morley Gunderson and Katherine Swinton, Collective Bargaining and Asbestos Dangers at the Workplace, Study No. 1 prepared for the Royal Commission on Asbestos (Toronto: The Commission, 1981).
17. See Economic Council of Canada, Responsible Regulation, op. cit. note 3 and Economic Council of Canada, Reforming Regulation (Ottawa: Supply and Services Canada, 1981).
18. See W.T. Stanbury, Regulation in Canada: Scope, Process, Effects (Montreal: Institute for Research on Public Policy, 1980), Chapter 1.
19. See Paul H. Weaver, "Regulation, Social Policy and Class Conflict," The Public Interest 50 (Winter 1978): 45-64.
20. See John Mendeloff, Regulating Safety (Cambridge, Mass.: MIT Press, 1979).
21. See A.L. Nichols and R. Zeckhauser, "Government Comes to the Workplace: An Assessment of OSHA," The Public Interest (Fall 1979): 39-69. See also G. Bruce Doern and John Kowalsky, The Grain Dust Case (Toronto: Institute of Public Administration of Canada, 1979).
22. See "Deregulation HQ:....", op. cit. note 12.
23. G. Bruce Doern, Rationalizing the Regulatory Decision-Making Process, op. cit. note 4.
24. Canada. House of Commons, Special Committee on Regulatory Reform, Report (Ottawa: Supply and Services Canada, 1981).
25. See Economic Council of Canada, Reforming Regulation, op. cit. note 17, at Chapters 8 and 9.

26. See Doern, Rationalizing the Regulatory Decision-Making Process, op. cit. note 4, at Chapter 2.
27. See Robert D. Anderson, "The Federal Regulation-Making Process and Regulatory Reform, 1969-1979," in Government Regulation: Scope, Growth, Process, ed. W.T. Stanbury (Montreal: Institute for Research on Public Policy, 1980), pp. 151-192.
28. See Mendeloff, op. cit. note 20.
29. See G. Bruce Doern, The Politics of Risk: The Identification of Toxic and Other Hazardous Substances in Canada, Study No. 4 prepared for the Royal Commission on Asbestos (Toronto: The Commission, 1982).
30. These are reviewed in G.B. Reschenthaler, Occupational Health and Safety in Canada (Montreal: Institute for Research on Public Policy, 1979), pp. 21-26.
31. See R. Sass, "The Underdevelopment of Occupational Health and Safety in Canada," in Ecology Versus Politics in Canada, ed. William Leiss (Toronto: University of Toronto Press, 1979), pp. 72-96.
32. See Donald N. Dewees, Evaluation of Policies for Regulating Environmental Pollution, Regulation Reference, Working Paper No. 4 (Ottawa: Economic Council of Canada, 1980) and Steven Kelman, "Economists and the Environmental Muddle," The Public Interest 64 (Summer 1981): 106-123.
33. Kelman, op. cit. note 1, at p. 203.
34. Ibid., p. 196.
35. G. Bruce Doern, The Atomic Energy Control Board (Ottawa: Law Reform Commission, 1977).

C H A P T E R 2

ENVIRONMENTAL REGULATION, IMPLEMENTATION, AND ENFORCEMENT

We begin our analysis of three specific regulatory sectors in the health and safety field by examining environmental standard-setting processes, implementation, and compliance in Ontario.¹ Our concerns in this chapter go well beyond those which govern the control of a particular hazard such as asbestos. At the same time, however, we cannot claim that we examine all aspects of environmental regulation, especially given the numerous statutes and types of pollution in existence. We attempt to cover a middle ground between these two extreme levels of coverage.

Some environmental regulation has been a part of public policy for decades and hence predates the existence of environmental departments.² Most environmental regulation, however, is a product of the last fifteen years.³ The central focus of concern in the environmental field has changed over the years as experience was gained and legislation was put in place. Thus in the early period concern focused on so-called visible pollution associated generally with problems of combustion. Later developments centred on problems of odour and smell. In the latter 1970s toxic substances in all phases of the production process, from the introduction of new chemical products to the long-term disposal of toxic wastes, became a dominant concern.⁴

The climate for environmental regulation in the early 1980s is vastly different from that in the early 1970s.⁵ Early environmental regulation was a product of relative economic prosperity. In the 1980s, such regulation is much more likely to be viewed by some as an obstacle to a productive economy. Our focus is on recent and current environmental regulatory practices in Ontario and hence it is easy to lose historical perspective on this issue. It is necessary, however, to appreciate the broader historical evolution of environmental regulation since, as we will see, it influences regulatory practice in important ways.

The analysis is organized into four parts. We first provide a brief profile of the main Ontario institutions and statutes involved, with some reference to federal practices as well. The second part examines the standard-setting process in Ontario. We then explore implementation and enforcement activities. Finally, we offer some concluding observations about the current state of environmental regulation in Ontario.

INSTITUTIONAL AND STATUTORY PROFILE

Ontario Ministry of the Environment (MOE) and Ontario Legislation

Environmental regulation in Ontario is based on four statutes: The Environmental Protection Act, The Water Resources Act, The Pesticides Act and The Environmental Assessment Act.⁶ The Ontario MOE is also an active participant as part of the Canadian delegation on the International Joint Commission, which regulates water quality in the Great Lakes.⁷ Ontario's environmental legislation is summarized in Table 2.1. Among the four statutes listed there can be little doubt that The Environmental

TABLE 2.1ONTARIO'S ENVIRONMENTAL LEGISLATIONThe Environmental Protection Act:

This Act covers all types of pollution, forbidding the discharge of any contaminant to the natural environment in amounts or concentrations exceeding those prescribed by regulation. Contaminant definition includes solids, gas, liquids, odours, sound, vibration, radiation or combination of any of these which result directly or indirectly from activities of man and may cause injury to humans, flora or fauna.

In addition to regulated limits, the Act prohibits any discharge that is likely to impair the natural environment, injure or damage plant or animal life, cause harm or discomfort to any person, affect the health or safety of any person or render any property, plant or animal life unfit for use by man.

The Ontario Water Resources Act:

This Act gives the Ministry of the Environment extensive powers to regulate the water supply, sewage disposal, and the control of water pollution. It authorizes the Ministry to supervise and examine all surface waters and ground waters in Ontario, to determine the extent, nature and causes of contamination in these waters.

The Ministry can construct and operate water waste treatment facilities, or it can require an industry or municipality to construct and operate approved facilities.

The Environmental Assessment Act:

This Act provides for the assessment of any proposed major undertaking, governmental, municipal or private, at the very earliest stage to permit alteration or even cancellation of the undertaking should it be environmentally unacceptable. It also provides for full public participation in the decision-making process. It is being implemented in stages, applying first to major provincial and certain municipal undertakings. Preliminary discussions are now underway on extending the Act to the private sector.

The Pesticides Act:

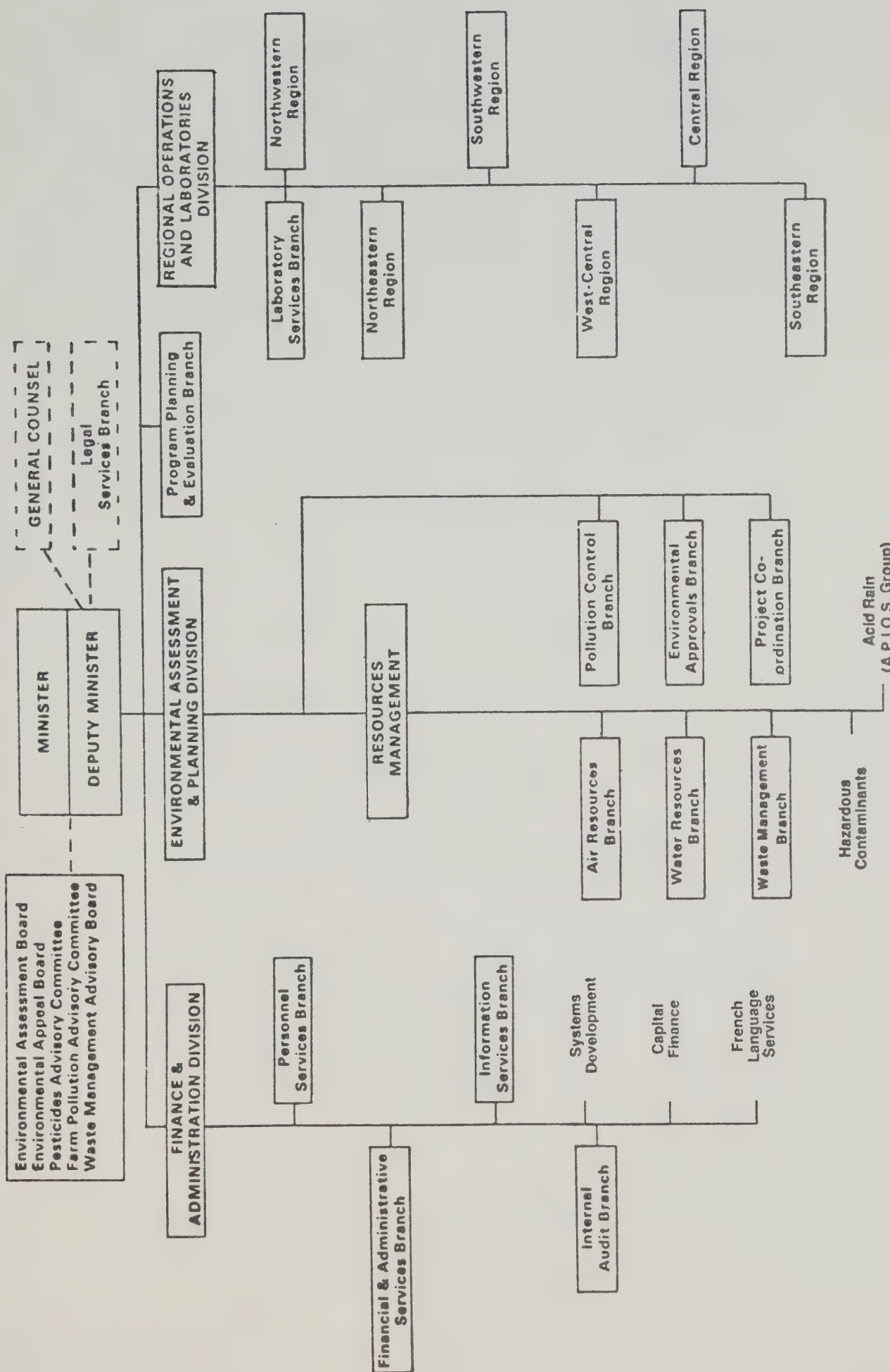
This legislation restricts the storage, distribution, sale and use of pesticides. The Ministry examines and licenses professional exterminators and maintains a classification system to ensure that hazardous chemical pesticides are not handled or used by unqualified persons.

Source: Ontario Ministry of the Environment, Annual Report 1979-80, p. 4.

Protection Act and The Water Resources Act are the most frequently used to regulate the environment in Ontario. Chart 2.1 portrays the basic organization of the MOE. The MOE has three main divisions with different branches located within them. In general the standard-setting function is focused on the Environmental Assessment and Planning Division while implementation occurs primarily through the field offices which operate under the Regional Operations and Laboratories Division. The field offices will be examined in detail in a later section of this chapter. The Environmental Assessment and Planning Division provides the main scientific and technical base for the MOE activities. The Division serves as the central approval and co-ordinating agency for applications involving the design, construction, and operation of water, sewage, solid waste reclamation and recycling plants, and waste disposal sites required under Ontario legislation. It also conducts scientific and technical research assessment and pollution control programs involving the use of water, land and air resources, the environmental implications of realty development, and the control of all forms of pollutants. In addition, it provides technical and supervisory services required in the planning, construction, and operation of water and sewage treatment plants, solid waste and resource recovery facilities.⁸

Located within this Division is a Hazardous Contaminants Office, established in May 1980. This small office of three persons will co-ordinate all MOE programs related to hazardous contaminants. It is directed by a Management Committee chaired by its Executive Director and composed of directors of the branches and regions.⁹ A prime concern in the Office's early work has been the disposal of liquid industrial waste. In

MINISTRY OF THE ENVIRONMENT



January 1981, a special core of thirteen investigators was appointed to specialize in the policing of liquid industrial waste haulage and disposal. The focal point of this new control system will be an improved waybill monitoring system for all liquid industrial wastes.¹⁰

The Environmental Protection Act contains a general prohibition against anyone emitting or discharging any contaminant into the natural environment as well as a specific prohibition against polluters who pollute in an amount, concentration, or level in excess of that prescribed by the regulations. A polluter must obtain a certificate of approval from the Minister before proceeding with the construction or alteration of production equipment. This approvals process will be examined later in the chapter. The statute provides for an exemption from prosecution under the regulations for any person who is complying fully with a control order or approval issued by the Minister. Thus, pollution can still exist despite the toughness of the general prohibition provision because prosecution cannot occur if a person is carrying out the provisions of approvals or orders. In addition, The Environmental Protection Act gives the Minister the power to investigate pollution problems, conduct research related to contaminants (any solid, liquid, gas, odour, heat, sound, vibration); establish monitoring programs to determine the quality of the natural environment; conduct studies into environmental planning and design; convene conferences and conduct seminars; gather, publish, and disseminate information relating to contaminants; and make grants and loans for research and training.¹¹

Section 83 of the Act permits a designated Provincial Officer to enter a site or plant at any reasonable time and make surveys, examinations, investigations, tests, and inquiries including examination of books, records, and documents. He may make, take, or remove samples, copies or extracts. The Provincial Officer is required to keep all information confidential except in respect of the deposit, addition, emission, or discharge of a contaminant into the natural environment.

Section 8 of the Act requires approval from the Ministry for any new processes that may emit or discharge a contaminant into the natural environment other than water. Thus, any new production of toxic substances would be examined to ensure the permissible emission rate is met. The Lieutenant Governor may make regulations relating to:

- (a) classifying contaminant and source contaminants and exempting any classes;
- (b) prohibiting or regulating the deposit, addition, emission or discharge of any contaminant into the natural environment;
- (c) prescribing maximum permissible amounts, concentrations, or levels of any contaminant;
- (d) prescribing the methods or standards or both for determining the amount, concentration or level of any contaminant.¹²

The Ontario Water Resources Act also contains a general prohibition clause against discharging pollutants that cause harm.¹³ However, any pollution source that has been approved by the Ministry is exempt from the prohibition clause. The Act requires municipalities or persons to obtain approval from the Ministry for sewage work. If they are complying with an approval or order they cannot be prosecuted. Thus, similar to The Environmental Protection Act, The Water Resources Act contains its own contradictions that make prosecution difficult.

The Ontario Water Resources Act does not contain environmental standards for specific substances. It does provide the overall definition of what may constitute impairment or pollution of the aquatic environment. A document, "Water Management, Goals, Policies, Objectives and Implementation Procedures," published by the Ministry in November 1978, provides goals, policies, and, where possible, specific objectives as to what constitutes acceptable water quality. In addition to outlining objectives for a number of toxic substances, the policy is to require case-by-case examination of any proposal to release any hazardous substances for which provincial water quality objectives have not been established. The Ministry is also empowered to do research and supply information and technical advice on pollution control. This includes investigation of monitoring studies to determine if pollution is occurring. Ministry staff are legally empowered to enter, inspect, and test a facility which may be discharging sewage. All plans and specifications for effluent discharge must be submitted to the Ministry to obtain a permit prior to construction of the units.

Under the authority of The Pesticides Act and regulations administered by the Pesticides Control Section of the Ministry of the Environment, all pesticide products sold in the Province of Ontario must be classified and assigned to a schedule.¹⁴ The pesticides classified are listed by their P.C.P. number or registration number in their assigned schedule in a supplement to The Pesticides Act.

Through examination by qualified persons, the knowledge and competence of those wishing to apply pesticides is tested. For some classes of licences, public liability and property damage insurance is a prere-

quisite. The Act has many similarities to The Environmental Protection Act. It gives the power to issue control orders and the formation of a Pesticides Appeal Board for review.

Under The Environmental Assessment Act any proponent of an undertaking must submit to the Ministry an environmental assessment on the proposal.¹⁵ All interested parties are given an opportunity to examine this document and may request that a public hearing be called by the Environmental Assessment Board established under the Act.

The assessment documents must indicate the proposed project and the effect it will have in all phases of the environment, including socio-economic factors. It must outline alternative processes and sites and justify the proposed project.

Where no hearing is held by the Environmental Assessment Board, decisions are made by the Ministry or the Minister with the approval of Cabinet. Where a public hearing is held by the Environmental Assessment Board, it makes the decision on whether an environmental assessment is accepted, or changed and accepted, and whether or not approval to proceed is withheld, given, or given subject to terms and conditions. There are no appeal rights as such but where the Environmental Assessment Board makes a decision, the Cabinet has the right, on its own initiative, to review the decision and reverse or modify it.

Federal Department of the Environment and Federal Legislation

Although provincial legislation is dominant in the environmental field, both standard-setting and implementation and enforcement are influenced by federal activity centred in the Department of the Environment (DOE).¹⁶ Federal involvement is based primarily on the Fisheries Act, the Clean Air Act, and, more recently, the Environmental Contaminants Act.

The Fisheries Act gives extensive powers over water quality to federal authorities in respect of oceans and inland waters which cross provincial boundaries.¹⁷ It contains roughly parallel provisions to those of the Ontario Environmental Protection Act and The Ontario Water Resources Act in that there is a general prohibition clause against the discharge of a deleterious substance in water frequented by fish and similar exemptions against prosecution when a person operates under an agreed approval or order. Under section 33(12) the Minister may make regulations prescribing substances or classes of substances; quantities or concentrations of substances and classes of substances in water; and treatments, processes, and changes of water as being "deleterious substances" and therefore limit their deposit into waters frequented by fish.

Section 33.2(3) gives authority for an inspector to enter a premises at any reasonable time to conduct inspections, examine any substance or product, take samples, or conduct tests and measurements.

Regulations and guidelines under section 34(h) of the Act are developed on an industry sector basis. Priorities are established on the basis of gross loadings to receiving streams. A task force is struck for each industry sector consisting of representatives from federal and provincial governments and industry. Industry processes are examined in detail to identify commonality between processes, level of treatment, technology in place or required, and gross loadings. On this basis, best practicable technology (BPT) is determined (or research is conducted to determine BPT) and a regulation (for new, altered, or expanded operations) or guideline (for existing sources) is developed.

Under section 33.1(1) anyone proposing a new work or undertaking that may result in the deposit of a deleterious substance may be required to submit plans and specifications or to take samples, conduct analyses, or complete studies and evaluations regarding the deposit of the substance and specify any mitigating measures that may be required.¹⁸

The Clean Air Act gives the federal government authority to conduct a national program of air pollution surveillance in Canada; to establish national air quality objectives or targets for air quality; to establish regulations that will include emission standards applying at the source of air pollution; and to establish guidelines which contain recommended¹⁹ emission limits.

National air quality objectives are designed to protect public health and the environment by setting limits on the concentrations of contaminants in the ambient air. The Clean Air Act makes provision for three levels of air quality objectives for major air contaminants: desirable, acceptable, and tolerable.

- (a) The maximum desirable level defines the ultimate goal for air quality and provides a basis for an anti-degradation policy for the unpolluted parts of the country and for the continuing development of control technology.
- (b) The maximum acceptable level is intended to provide adequate protection against adverse effects on soil, water, vegetation, materials, animals, visibility, personal comfort, and well-being.
- (c) The maximum tolerable level denotes a concentration of an air contaminant that requires abatement without delay to avoid further deterioration to an air quality that endangers the prevailing lifestyle or, ultimately, to an air quality that poses a substantial risk to public health.

National air quality objectives are developed by expert subcommittees of the Federal-Provincial Committee on Air Pollution. Those published to date include sulphur dioxide, suspended particulates, carbon monoxide, ozone, nitrogen dioxide, hydrogen fluoride, and hydrogen sulphide.

Additional assessments for specific sources of air pollutants are based on the extent of exposure to the general public and on an analysis of production, uses, properties of the pollutant, and the technology available for limiting release of the substance.

Finally, one statute of further interest in this study is the Environmental Contaminants Act which provides a system for the identification of the potential entry of a chemical into the environment and an assessment of its likely impact.²⁰ When substances constitute or will constitute a significant danger to human health or the environment, the government may place the substance in a Schedule and simultaneously bring in regulations to control it or restrict its uses. The legislation requires that chemical and manufacturing companies notify DOE when, for the first time, they use more than 500 kg of a chemical within a calendar year. It also can require companies to carry out tests and provides for an Environmental Contaminants Board of Review to which proposed orders and regulations must be referred for review if notice of objection is filed.

A list of Priority Chemicals has been developed under the Environmental Contaminants Act. The list, comprising primarily chemical substances that are imported into Canada or manufactured or processed in Canada, does not incorporate a ranking system but divides the chemicals into four categories. These categories reflect the status of the chemicals with respect to development of regulations or further investigations needed. Three sets of criteria are used to select chemicals for the list:

- (a) Toxic effects. Evaluation of scientific data leads to the conclusion that the chemical substance causes or could cause adverse effects on human health or the environment.
- (b) Persistence. Evaluation of scientific data leads to the conclusion that the chemical substance could accumulate or is accumulating to significant concentrations in air, water, soil, sediment, or biota.
- (c) Quantity and use. Evaluation of available data on the importation, manufacture, or processing of a chemical substance leads to the conclusion that the substance could enter or has entered the environment in significant quantities.

The lists are revised on a yearly basis.²¹

In order to enforce the Act, inspectors are designated and assigned specific responsibilities. An inspector is not given carte blanche power to enter any place at any time to carry out an inspection. The first restriction is that the inspection should be conducted at a reasonable time.

In addition, the inspector must have a reason or justification for believing that a contravention of the Act has occurred and that it is necessary to enter the place to conduct enforcement activities. Therefore, "fishing expeditions" are not permitted. The wording of this section is broad enough to allow a search for all contraventions of the Act, including the failure of a person to supply information pursuant to a notice in the "Canada Gazette."

Sections 8 and 18 of the Environmental Contaminants Act contain comprehensive powers to restrict or prohibit the release of a named substance into the environment, the use of that substance for certain purposes, or its incorporation into a manufactured product. Controls under

the Act will be affected by adding a substance or class of substances to a schedule to the Act and by prescribing regulations to prevent the entry of the substance into the environment.

Although the Act gives the power to regulate the importation, manufacture, or processing of any chemical substance that poses a threat to human health or the environment, chemicals that are used solely as drugs, food additives, or pesticides are arbitrarily excluded from consideration because they are already scrutinized and controlled under other specific federal legislation. Substances which have been banned from use or manufacture under the Act are polychlorinated terphenyls, polybrominated biphenyls, and Mirex. Regulations are also in effect to limit certain uses of PCB's and chlorofluorocarbons.

The federal government does not have an environmental assessment statute similar to the Ontario legislation noted above. Instead, only a federal Cabinet directive governs the review of major projects involving federal funds or federal lands. An environmental assessment process can be invoked but it has been criticized for its lack of teeth and for the relative ease with which the process can be avoided.²²

The federal Department of the Environment (DOE) has an extensive technical and advisory capability but only a limited inspection and compliance capability since it relies on the provinces to enforce the few standards it has the authority to set. This is done through the normal provincial inspections and approvals process. Federal requirements are simply added to the order or approval. The provincial government provides periodic reports to DOE and consults with DOE as needed. DOE's primary regulatory role is found in the Environmental Protection Service.

Its main components are the Air Pollution Control Directorate, the Water Pollution Control Directorate, and the Environmental Contaminants Control Board, the Environmental Emergency Branch, and the Hazardous Waste Management Branch.²³

In 1979, DOE established a Toxic Chemical Management Centre to help set regulatory priorities, establish education and information programs, and develop a control strategy.²⁴ At full strength it will be composed of about 20 persons, primarily scientific personnel. The Centre possesses no direct regulatory powers. Its functions are directed by a steering committee of several departmental assistant deputy ministers.

In this study we focus on Ontario practices. The provincial jurisdictional role in standard-setting and enforcement is the primary task of later sections of this study. Certain features of the federal role, however, do deserve special mention and are necessary as background information if one is to understand federal-provincial relationships in this field of regulation. These features are summarily listed below without further comment.

- (a) The Fisheries Act is the responsibility of the Minister of Fisheries. Administration of the Act, however, belongs to DOE.
- (b) Federal regulations are developed through special task forces involving provincial governments and the industries concerned. They are based on a concept of "best available control technology" for the abatement task at hand. This implies that if the best technology is available then it should be used. This is only a partial economic criterion since it does not directly address the different economic circumstances of different firms within the same industry and their capacity to absorb the financial consequences of the best technology. Since 1978, major new federal regulations must also undergo the SEIA analysis described in Chapter 1.

- (c) Regulations and guidelines are usually distinguished from each other but not always. For example, air regulations exist for chlor-alkali emission, vinyl-chloride, lead from secondary smelter emissions, asbestos, arsenic, and lead from leaded and unleaded gasoline.²⁵ Guidelines, on the other hand, are established as national base line objectives. It is expected that the services will then establish regulations that meet at least minimum guidelines. Guidelines exist for SO₂, NO_x, HC, and CO and particulate emissions. The federal government could enforce these guidelines only when these emissions move across provincial or international boundaries.
- (d) The regulatory philosophy of the federal government is to contain a contaminant at source ²⁶ whereas the Province of Ontario emphasizes control by assessing assimilative capacity at "point of impingement." These differences need not interfere with effective enforcement per se but they have led to differences of view and some conflicts.
- (e) Regulations apply to new and existing plants whereas guidelines are intended to apply only to old establishments. For example, in the case of acid rain and petroleum refining guidelines, the guidelines are intended to ensure that the problem does not become worse.
- (f) Federal regional office personnel located in the five regional offices spend most of their time engaged in three activities, namely: referrals from provincial officials questioning whether or not an industry or firm should receive an approval (see section below) in terms of meeting federal standards; Department of Regional Economic Expansion (DREE) grant cases where DOE advises whether proposed projects meet federal environmental requirements; and work on specific sites, which involves primarily studies of water use, effluent sources, and related effluent characteristics.²⁷
- (g) The federal approach to enforcement has been one of persuasion, bargaining, and the "soft push." Prosecutions are rare.

We will refer again to some of these federal regulatory practices in the analysis to follow.

Great Lakes Water Quality Board

This Board is an arm of the International Joint Commission (IJC) and hence exercises regulatory influence over international waterways such as the Great Lakes.²⁸ As noted earlier, Ontario has a major role as part of Canada's representation on the IJC and its subsidiary boards and committees. In 1980, the Water Quality Board established a Toxic Substances Committee to evaluate the effectiveness of programs and activities by governments at the federal, provincial, and state levels of government as they affect the control of hazardous substances.²⁹ The Committee has only begun its work but has already suggested an overall framework for control in the Great Lakes area. Its influence, however, has been very limited.

Other Federal and Provincial Departments and Statutes

Ongoing standard-setting and compliance activity is influenced by the activities of other departments and agencies with partial "environmental" and hazardous substance mandates. We have stressed the importance of these interagency influences in Chapter 1. More specifically, however, it is important to mention such agencies as the Atomic Energy Control Board (under the Atomic Energy Control Act), agriculture departments (pesticide control), consumer departments, transportation agencies, and of course labour departments (see Chapter 3).³⁰

Public Interest Groups

Interest Groups such as Pollution Probe, Energy Probe, the Coalition for Nuclear Responsibility, and the Canadian Environmental Law Association have been actively involved in environmental issues. In some areas of environmental regulation and implementation such as nuclear power they have had forums for participation and the expression of views. In other areas, including normal standard-setting for specific substances they have had few avenues to express their views. They have often utilized the media effectively to make their views known, but on the whole they have been peripheral to the ongoing standard-setting and compliance processes.

In general, public interest groups have been especially weak in the compliance process. The submissions made to the Royal Commission on Asbestos and reviewed in our separate study of the views of major institutions show only passing interest in the day-to-day compliance process.

Municipalities and Local Government

As democratic institutions and as owners and managers of facilities such as sewage and water treatment plants, local governments play an important role, albeit still on the periphery of the regulatory and compliance process. In particular they are frequently a channel for complaints about day-to-day environmental concerns. They often have more contact with provincial and federal environmental field personnel than do the federal and provincial "headquarters" of these departments. In specific areas, especially in the larger cities, they have expertise to rival that of the environmental ministries.

Industrial Associations

In the process of standard-setting, particular industrial associations are often consulted. Regulators instinctively seek out industrial views because they are absolutely dependent on at least a minimum level of industrial co-operation and industrial knowledge if they are to regulate successfully at all. For most of the compliance process, however, industrial associations are relatively unimportant. At this stage the focus shifts to the approvals process and thus, as we will see below, to the level of the individual firm as the numerous regulatory "negotiations" are conducted, largely by the regional field personnel.

STANDARD-SETTING PROCESSES

Because there are several Ontario statutes from which environmental regulations might potentially evolve, there are several standard-setting processes. Space will not allow us to describe them all, nor is this necessary for our purposes. Instead we will focus on the processes followed in Ontario to determine ambient air objectives and emission standards. They are fairly representative of MOE's approach since the air sector has been one where standards have been most used, much more so than on the water side of the environmental coin.

As could be expected these processes have evolved over the years as experience has been gained. During the past decade about 100 standards and 60 guidelines have been set.³¹ MOE's attempt to distinguish between standards and guidelines will be examined below but it is important to note at the outset that the tendency in recent years has been to set

fewer standards and more guidelines. This is because, as one official put it, "We have solved the easy problems where scientific knowledge is good and we are dealing now with other pollutants on which technical knowledge is less certain." Levels of confidence in scientific and technical knowledge are the main basis for distinguishing a guideline from a standard in the environmental field.

Ontario's Standard-Setting Philosophy

Before describing the main stages in the standard-setting process it is essential to examine the philosophical basis for the Ontario approach. The Ontario approach is described by MOE officials as follows:

Ontario has followed a purely effects philosophy in its air standards-setting procedure. In order to have a uniform standard throughout the province for each contaminant, and to have that standard contain some rational relationship to ambient air quality objectives, the Ontario emission standards are stated in terms of time concentrations at the point of impingement (on a receptor) of the effluent stream, rather than as a conventional source emission number. This choice was made in recognition of the fact that ambient air quality is a function of both emissions and transport. The point of the emission is related to the point of impingement by the codified use of plume rise and diffusion equations. Thus this type of emission standard takes some reasonable cognizance of emission conditions, micrometeorology, land usage and topography.³²

In adopting the "effects" approach, Ontario rejected the federal philosophy of "best practicable technology." The former is judged by Ontario officials to have the technical advantage of linking both source emission and air transport. Moreover, "it is usually acceptable to those who are required to spend funds on emission control since there is a

defensible reason for spending the funds."³³ The concept of best practicable technology, on the other hand, requires the removal of the contaminant to the lowest practicable limit now; that is, sometimes to a lower level than that required by a purely effects approach.

Under either system, judgement and discretion are significant elements in the decision process. For example, several main factors are taken into account in determining any 1/2-hour impingement concentration standard. These include:

- (a) Sampling time differential. The ambient air objective is first translated from its normal terms of a 24-hour average concentration to a 1/2-hour average concentration using as a basis the time concentration curves produced by investigators such as Nonhebel, Wippermann, and Meade. Generally speaking, the ratio of 1/2-hour to 24-hour value is taken as 3 to 1.
- (b) Background contaminant concentration. This is usually done by considering whether the contaminant is a commonly emitted one or whether it is an unusual substance. This includes factors of transport since a number of sources may contribute to air quality at a receptor. Also considered is whether the contaminant is present in the natural environment in significant concentrations.
- (c) Practical considerations of emission control. In setting an impingement standard to meet an ambient air objective, consideration of cost is not normally used as a factor because the objective of the exercise is to achieve the air quality objectives. However, in special circumstances, source control technology can be used to help to set the standard. For example, in the case of a substance for which the determinate factor in arriving at the air objective is odour, and where the odour threshold is reported to be a wide range (e.g., hydrogen sulphide) then considerations of cost of control may help determine which end of the threshold odour range is chosen.
- (d) Other factors which should be considered when appropriate in judging the relationship between ambient air and the emission standard. These include such things as synergistic reactions, air reactions, and any special health considerations which may be involved in time dosage.³⁴

Moreover, certain important technical assumptions are built into the concept. For example, an expected or average background concentration for common contaminants is assumed to exist. The equations used "assume a level plane type general ventilation over the area of emission."³⁵ Neither of the assumptions may always be true, and hence adjustments must be made.

The Ontario standard-setting processes for airborne contaminants involves several stages or, more accurately, interlocking and often concurrent processes. These are:

- (a) A technical phase focused on the work of the permanent standard-setting committee (described below) composed of Ontario government experts.
- (b) A political/economic phase. This phase can involve much informal judgemental "cost-benefit" communication particularly between the minister, senior public servants, and industry, especially where the standard is contentious or involves significant capital costs. Recently this phase has come to include a requirement for the production of formal cost-benefit or economic assessment data.
- (c) A legal phase. This phase involves the drafting of standards (but not guidelines) into the proper legal form required by the Ontario statutory instrument legislation including publication in The Ontario Gazette.

The Technical Determination of Standards

The Environmental Air Standard-Setting Committee of MOE has functioned since the mid 1970s. Its task is to develop the technical and scientific documentation and evaluations leading to the recommendation of ambient air criteria, standards, and guidelines.³⁶ Two subcommittees also exist to handle the establishment of source and ambient air testing procedures for each air contaminant under consideration. The composition

of the main committee is outlined in Table 2.2. It is essentially an MOE committee which meets monthly but is dependent upon health experts in the Ministry of Health and recently the Ministry of Labour. The increasing demands for advice and research placed on this same small core of health experts by the growing occupational health concerns (see Chapter 3) has adversely affected the speed with which the air contaminants committee can function.³⁷

Table 2.3 provides a profile of the sources of information and advice used to determine the effects of a contaminant on humans, vegetation (including aquatic plants), animals (including fish), and property.

The main elements of the Committee's work must be seen in the context of Table 2.4 which sets out in summary form the four types of standards and guidelines. Thus the Committee's tasks and the sequences followed vary greatly once the need to investigate a particular contaminant has been communicated to the Chairman of the Committee:

- (a) The members of the Committee initiate investigations in their respective field of expertise, with the objective of establishing a maximum allowable ambient air concentration in each of the main areas of concern -- human health, vegetation, animals, and property. These suggested values, including the full rationale, will be submitted to the Chairman in writing.
- (b) Copies of the above reports are sent to all members for informational purposes. In the light of the available data, the Chairman proposes a tentative ambient air objective and standard for discussion purposes with the regional organizations and others.
- (c) When the Committee has agreed upon an ambient air objective, the point of impingement (emission) standard will be so chosen that, in general, if all sources in an area meet this value, the ambient air

TABLE 2.2
MEMBERSHIP OF THE
ONTARIO ENVIRONMENTAL AIR STANDARD-SETTING COMMITTEE

1. Criteria Development Section Air Resources Branch	One representative to act as chairman, co-ordinator and general secretary for the Committee.
2. Environmental Health Section Ministry of Health	One representative to advise the Committee on all health aspects, including medical opinion outside government.
3. Phytotoxicology Section Air Resources Branch	One representative to advise on effects on vegetation. Also responsible for input from the agricultural community and universities with respect to impact on animals and agriculture.
4. Air Quality & Meteorology Section Air Resources Branch	One representative to advise on air transport characteristics of contaminant.
5. Technology Development and Appraisal Section Air Resources Branch	One representative responsible for technological advice, particularly with respect to new technology. Also handles preliminary investigations and surveys where hazardous contaminants are involved.
6. Industrial Section Pollution Control Branch (This group is currently quartered in the Waste Management Branch)	One representative responsible for obtaining input from field and initial input from the industry and/or industry association, as well as the Environmental Approvals Branch.
7. Limnology and Toxicity Section Water Resources Branch	One representative to assess the possible impact of the new contaminant on aquatic life and vegetation. Also responsible for the interests of the Ministry of Natural Resources.
8. Land Use Planning and Special Studies Section Environmental Approvals Branch	One representative to provide information on any broad economic, social or planning effects of any proposed standard or guideline.
9. Noise Pollution Control Section Pollution Control Branch	One representative (as required) to advise on guidelines for standards dealing with noise pollution.

TABLE 2.3
Derivation of the Limiting Ambient Air Criterion for a Contaminant

Effect on Humans		Effect on Vegetation	/	Effect on Animals	Effect on Property and Materials
Investigated by	Environmental Health Studies Section	(1) Phytotoxicology Section Air Resources Branch			Technology Development and Appraisal Section Air Resources Branch
Usual Sources of Information	1. Published epidemiological studies	1. Published articles on effects on specific plant species	1.	Published articles on observed effects on animals	1. Literature search with respect to - Corrosion Soiling Odour Threshold Synergistic Effects Air Reactions
	2. Studies on human exposure (1) Acute toxicity (2) Chronic "	2. Greenhouse experiments on sensitive species under controlled conditions	2.	Contact with the Veterinary Branch of the Ministry of Agriculture and Food	using standard sources such as: (1) Kirk-Othmer Encyclopedia (2) Dangerous Properties of Industrial Materials (Sax)
	3. Studies on animal exposure (1) Acute toxicity (2) Chronic "	3. Field experience with actual case histories	3.	Personal communication with experts in the field	(3) Compilation of Odor and Taste Threshold Data (Stahl)
	4. Published Threshold Limit Values for Occupational Exposure (American Conference of Governmental Industrial Hygienists)	(2) Toxicity Unit Water Resources Branch			2. Actual experience in the field involving ambient air studies

TABLE 2.4

CATEGORIES OF POINT OF IMPINGEMENT
AIR STANDARDS AND GUIDELINES

Category I - Standards
(Point of Impingement)

These values were established with a high degree of confidence on the basis of data availability covering all aspects of the contaminant effect. They have been approved by the Environmental Air Standard-Setting Committee, and Cabinet, and have been officially published in The Ontario Gazette. Standards are used for compliance for both existing abatement action and new source approval. In any appeal action of a Director's Order, or denial of a Certificate of Approval, the applicability of these standards is not open to question. (However, timing, economics, etc., may be argued in an Appeal.)

Category II - Tentative Standards

Sufficient data are considered available in this category to produce firm standards. The tentative standards proposed have been approved by the Environmental Air Standard-Setting Committee but have not yet received official approval nor have they been published. Tentative standards can be used for abatement action (e.g., Director's Orders) and and for the assessment of applications for Certificate of Approval in much the same manner as full fledged standards. However, in any Appeal (to the Environmental Appeal Board) from a Denial or a Director's Order, these values may be questioned with regard to their appropriateness.

Category III - Guidelines

The lack of data in one or more aspects of the contaminants in this category prevents recommendation of firm standards. However, the available data is considered adequate enough to justify the setting of limit values with some confidence. Under these circumstances the recommended values are treated and passed by the Environmental Air Standard-Setting Committee as guidelines. Guidelines will be issued by the Chairman of the Standard-Setting Committee to the interested branches of the Ministry for use in abatement action or in the granting of conditional Certificates of Approval, subject to re-assessment when the official standards are produced. Again, in any appeal action the applicability of the guideline values may be questioned.

Category IV - Provisional Guidelines

In this category these air contaminants are lacking definitive data in several important aspects and extensive time will be required to obtain the necessary information. Nevertheless, a working value is urgently needed. The Chairman of the Standard-Setting Committee will recommend provisional guidelines (1/2-hour ave.) based on initial response from the Environmental Health Studies Section and any other data which may be obtained on short notice. The values produced can be used in abatement action or in the granting of conditional Certificates of Approval, subject to re-assessment when the official standards are produced. As in the previous category, in any appeal action, the applicability of these guideline values may be questioned.

criterion will also be met. These values will now be presented to the two subcommittees for recommendations on method of analysis at the source and in ambient air.

- (d) The proposed ambient air criterion and point of impingement (emission) standard are forwarded to the Assistant Deputy Minister, for concurrence and distribution to the involved branches and divisions of the Ministry as tentative values. Simultaneously these values are sent to the Legal Services Branch for incorporation into correct legal form and submission to the Regulations Registrar's Office. After proper review the tentative values are submitted to the Cabinet for final approval and incorporation in the Regulations.
- (e) Under Cabinet directive it is currently necessary to prepare a socio-economic impact statement which must accompany the proposed criterion and tentative standard values to the Assistant Deputy Minister for concurrence and further legal process. The socio-economic impact analysis is conducted by the Program Planning and Evaluation Branch.
- (f) When the point of impingement (emission) standards have been published in The Ontario Gazette, changing their status from tentative to official, notification is sent to all appropriate personnel by the Chairman of the Standard-Setting Committee.
- (g) In cases where extensive time will be required for the development of the necessary data concerning the air contaminant and there is a need for urgency, the Chairman of the Standard-Setting Committee proposes a provisional guideline which will be based on the initial response from the Environmental Health Section plus any other data available at the moment.
- (h) Where a provisional guideline is involved, the Chairman of the Standard-Setting Committee notifies the concerned branches of the Ministry directly, clearly indicating the status and rationale of the guideline, so that it may be used intelligently for immediate situations.
- (i) In situations where there is insufficient information in one or more aspects of the contaminant to justify recommendation of firm standards, the Standard-Setting Committee proposes a guideline to remain in use until such time as adequate information does become available.

- (j) When all documentation concerning a guideline has been accumulated, the Chairman of the Standard-Setting Committee informs all interested branches, classifying the recommended value from the Committee as a guideline.
- (k) Any changes or revisions of regulations involving point of impingement standards are also processed through the Environmental Air Standard-Setting Committee for review and comment.³⁸

To the outsider these processes may well be seen to be cumbersome and complex with apparently little room for consulting outside groups or experts. At one level the effort to distinguish guidelines from standards on the basis of levels of technical knowledge seems sensible and inevitable. As we stressed in Chapter 1, however, it would appear that in the larger picture MOE officials regard standards and guidelines as having much the same impact, and both can at times be enforced flexibly or rigidly depending on the circumstances.

The development of the ambient air quality guideline criterion for asbestos illustrates these dilemmas as well as further problems with terminology through the use of the term "criteria." The asbestos criteria were developed in 1970 and hence pre-date the existence of the formal Standard-Setting Committee described above. They were devised in a very informal way with even less input from other experts and public groups than occurs in the system described above.

The 24-hour average ambient air criterion for any contaminant is the maximum acceptable concentration of the contaminant in community air and is below any adverse effect of the substance in the area of human health, effect on vegetation or animals, or on property. The 1/2-hour standard or guideline is used to assess individual source emissions of the contaminant, and is derived from the criterion taking into account such factors

as difference in time averaging periods, background concentration, and special health considerations. The concept of a criterion seems to be a synonym for a guideline. It is a guideline from which further guidelines and standards are derived.

In the case of asbestos it was considered necessary to establish a 1/2-hour guideline in weight of total asbestos per cubic metre of air, while the 24-hour ambient air guideline criterion was established on the basis of the concentration of asbestos fibres greater than 5 microns in length in the air. The reason for this switch was due to the controversy, still unresolved, as to the significance of fibre length on human health effects.

The current value for the 24-hour average guideline criterion was developed by MOE's medical consultant in January 1970. It was based on the occupational limit proposed at that time by the British Occupational Hygiene Society, which set the lifetime occupational exposure level no greater than 0.4 fibres per ml (for fibres greater than 5 microns in length), with a 95% probability of having less than 1% risk of developing clinical evidence of asbestosis. A reasonable ambient air quality guideline criterion was judged to be one tenth of the British occupational value or 0.04 fibres per ml over a 24-hour average period for fibres greater than 5 microns in length. This fraction was derived by taking into account two major considerations:

- (a) The occupational exposure is normally assumed to be 40 hours per week. For environmental purposes it must be assumed that the general public can be exposed for 24 hours a day and 7 days a week.

(b) Under occupational conditions it is considered that the individuals exposed are healthy adults at their prime of life, whereas when one considers exposure in the community it is necessary to include the very young, the very old, and the sick.

MOE officials recognize that extrapolation from occupational limits is not the best approach to use to establish environmental levels but they concede that in some cases it is the only information available to them.

In Chapter 4 we will see that problems arise in the asbestos in Ontario schools case study since there was confusion as to whether the air quality guideline criterion should apply in the "internal" environment of schools. While hindsight is a considerable advantage in these matters, it is nonetheless highly likely that had the standard-setting process in 1970 embraced a broader set of interests and been conducted more openly, some of these issues would have emerged. Since 1970 there have been improvements in the internal MOE processes (as described above), but not in the broader public consultative processes.

Types of Standards and Guidelines

As stressed above, the MOE system has four categories of point of impingement air standards and guidelines based on different degrees of certainty in scientific knowledge about the effects of a particular pollutant.³⁹ MOE has also used the concept of air quality criteria.

It is evident from the descriptions in Table 2.4 and the discussion above that the distinctions represent a continuum of types rather than one with sharp, well-defined characteristics. The actual day-to-day compliance effects of guidelines, standards, and criteria appear to be similar. They are treated the same by MOE's regional officials. It is also

necessary to keep in mind the central feature of Ontario's environmental legislation, namely, that prosecutions for violating standards or guidelines are not usually launched if the person is complying with an order or approval. Potential differences arise when there is an appeal to the Environmental Appeal Board, a body composed of 12 part-time members from various occupations and parts of the province.⁴⁰ But appeals from private industry are rare, since industry prefers to bargain at earlier stages in the process or wait to later implementation stages (see below) when there is ample room for adjustment. For example, in 1979-80 the Environmental Appeal Board received 52 valid appeals during its 28 days of hearings. About 66 percent of the appeals concerned decisions of local health units on private sewage systems. The rest concerned MOE decisions of all kinds, including waste disposal sites, waste management systems, waterworks, and air pollution controls.⁴¹

Political/Economic Processes in Standard-Setting

While the discussion above has been referred to as the "technical determinates" of standard-setting, it is evident from the frequent judgemental nature of these deliberations that there is considerable room for political and economic factors to enter into the process. As noted earlier, there are instances of what could be called "seat of the pants" political cost-benefit "assessment," the kind that occurs judgementally when ministers talk to other ministers, to senior public servants, to company presidents on the telephone, or, on some matters, when judgements are made about how a particular standard (or decision) will affect the general political mood of the day.

The Ontario standard-setting process in the environmental field is very much a closed "behind-the-scenes" process. This does not mean that for all standards, private politics is rampant. Much standard-setting is generally routine and based largely on technical factors. It should be noted, however, that the MOE encourages little public input in standard-setting (as opposed to the approvals process -- see below). It is much less than that now being practised by the Ministry of Labour in its post-1978 standard-setting process for designated substances, examined in Chapter 3. The scientific data and reports prepared by the Standards Committee are not routinely published or subjected to scrutiny by external scientific experts or by others.

An important issue in recent years has been the requirement for socio-economic impact assessments. Some of these are being prepared but clearly with widely varying degrees of both enthusiasm and competence. The Ontario process to date is not as formal as the federal SEIA process mentioned in Chapter 1 which requires that such studies be made public and hence available for comment and criticism. Such reports undoubtedly cause problems for regulators because they require them to verbalize, formalize, and quantify many of the judgements now based on private, behind-the-scenes political and administrative "calculus."

Legal Processes in Standard-Setting

As with the other processes described above there is a close connection between legal requirements and other aspects of the standard-setting process in the environmental field in Ontario. Ontario's statutory instruments legislation requires publication of all new regulations in The

Ontario Gazette . The process does not apply to guidelines. In contrast to the federal SEIA procedure (and now to Ontario occupational health legislation) there is no general provision for a period of notice and public comment for standards or guidelines in the environmental field in Ontario. Thus the legal basis for public input into standard-setting per se is quite limited. MOE officials are currently reviewing these processes particularly in the light of recent criticism of inadequacies in regulating toxic substances and waste disposal facilities. It would appear that they strongly oppose "American style" hearings to develop standards and favour the creation of some kind of advisory council. We will comment on such specific reforms in the final chapter of this study.

While formal legal opportunities for public input into standard-setting are limited in Ontario, it is important to note that a certain amount of political learning and exchange about standards does occur through other legal opportunities which were not created to deal with standards per se. For example, environmental assessment hearings, which are directed at reviewing projects rather than standards, often deal with standards anyway, at least in the sense that persons and groups voice criticism and comment about standards. Other similar opportunities occur through special inquiries or royal commissions. The cumulative impact of these on regulators is difficult to gauge, but they do constitute legal and political opportunities which deserve to be noted.

IMPLEMENTATION AND ENFORCEMENT

MOE's six regional offices and their satellite district offices are the focal point in the implementation and enforcement of Ontario's regulations and guidelines (and most federal regulations in the environmental field as well). Typically the regional director presides over four managers, one each for industrial abatement (commercial firms and agriculture), municipal and private abatement, technical support, and utility operations. The first two areas are by far the most central to regional and district operations.

A typical regional office will contain about 20 professional staff (engineers and technicians) and about 40 persons in total. A typical district office will contain five or six professional officers. Offices obviously vary in size according to the industrial and institutional composition of the area they serve. For example, the West Central Region, covering the Hamilton area, must deal with about 2800 industrial firms, a far larger total than most other regions.

The personnel in the regional and district offices are essentially engaged in three activities: visiting and inspecting plants and facilities, answering questions and dealing with complaints from the public, and developing program approvals and issuing orders. The last of these activities is centred primarily in the regional offices. These tasks are examined in greater detail below.

Compliance Philosophy: Program Approval and Self-Monitoring

The MOE does not have a compliance philosophy as explicitly articulated as that of the Ministry of Labour's "internal responsibility system" (see Chapter 3). The MOE philosophy is centred on the concept of program approvals which are in essence individual contract agreements between MOE and the individual firm or municipality proposing to build a facility or emit a pollutant into the air or water. The program approval is based on negotiation and persuasion, is unique to the circumstances of each applicant, but is expected to secure adherence to the standard and guideline in place for a particular contaminant.

MOE's strong preference is to secure program approvals by agreement rather than to rely on the issuance of abatement orders, its ultimate compliance tool, violation of which may lead to prosecution. This "middle of the road" compliance philosophy is also reflected in the fact that MOE relies on industry to do most of the basic monitoring and testing of emissions. Regional offices attempt merely to audit this activity carried out by firms.

It is to be remembered that there are differences in the air and water sides of environmental regulation. Standards have been used much more extensively in the air sector, whereas guidelines and goals are utilized almost exclusively in the water sector. These differences partly account for differences in the approval process. For example, approvals are required for all municipal and private projects. On the industrial side, however, approvals are required for industrial emissions, for discharge into rivers or lakes, but not for effluents that flow to a municipal treatment plant.⁴²

Approvals are also required for construction of landfill waste disposal sites. These are accompanied by public meetings before the Environmental Assessment Panel, whose decisions can be appealed to the Environmental Appeal Board.

The number of approvals dealt with each year has been growing. In 1979-80 industrial approvals were dealt with as follows:

	<u>Received</u>	<u>Approved</u>	<u>Cancelled</u>	<u>Denied</u>
Air	727	618	85	6
Water	102	79	25	0
Waste	<u>204</u>	<u>160</u>	<u>30</u>	<u>2</u>
	1,033	857	140	8

Approximately 3,000 applications were dealt with on the municipal and private abatement sides. This included 315 waste disposal site and systems applications, 277 of which were approved.⁴⁴ Ten hearings before the Environmental Assessment Board were held.

The Approvals Process

Section 8 of The Environmental Protection Act provides for the issuance of a certificate of approval by MOE. No person is supposed to emit or discharge a contaminant without such a certificate. Section 9 provides for the issuance of a document called a "program approval." A person responsible for a source of contaminant "may submit....a program to prevent or to reduce and control the addition to, emission or discharge into the natural environment of any contaminant from the source of the

contaminant." In general the certificate is compulsory and applies to new sources while the program approval applies to older or existing pollution. A person or firm "may" rather than "must" submit a program approval. The program approval document describes and approves a schedule of abatement activity submitted by the polluter.

While the above distinction between a certificate of approval and a program approval is important to keep in mind, the preparatory work and negotiations for each type of approval are quite similar. Our discussion in this section refers primarily to the program approval process but the issues are similar for the total MOE approvals process.

The program approvals process is fairly straightforward. (For a detailed step-by-step description, see Appendix A.) Using industrial applications as an example, the process begins when the company applies to MOE for a program approval to emit a particular contaminant or effluent and/or to install a particular abatement technology. The applications are assessed by regional office technical personnel, often with appropriate additional advice from headquarters. MOE officials are involved at an early stage in defining what the pollution problems are. There is also extensive discussion and negotiation with the firm's own personnel particularly about scheduling and timing. The firm involved is also apprised of the available financial assistance programs. In most cases agreement is reached and a certificate of approval is issued. It sets out the requirements to be met, including the timing and scheduling of the installation of equipment.

MOE officials then monitor compliance with the terms of the approval document, including the installation of equipment and final start-up activities. Ideally, beyond this stage there should be extensive inspection to ensure that equipment is properly maintained. Many MOE inspectors, however, assert that they have little time in which to schedule these ongoing follow-up inspections.⁴⁵

Should agreement not be reached, a control order may be issued. This is a very formal procedure requiring more extensive written documentation (since control orders are public documents). An order is legally more enforceable, but approvals have been viewed by MOE officials to produce good results. A control order may be issued under other circumstances as well. Indeed, as pointed out in Appendix A, such orders are generally issued as a contravention of Section 14 of the Act or a contravention of a standard or regulation.

If control orders are disobeyed prosecutions may be the result. For most of the past decade, however, MOE officials have viewed prosecution as a sign of regulatory failure rather than success.

Regional officials interviewed said that in the past two years they perceived a greater encouragement emanating from headquarters to utilize prosecutions and to rely less on gentle persuasion, but this perceived change is not particularly apparent in the broad scheme of things. As pointed out at the beginning of this chapter, there are some built-in contradictions regarding prosecutions and program approvals. MOE policy, as evident in Appendix A, is that where a polluter is complying fully with a program approval or control order it will not be prosecuted in respect of those items covered by the order or approval. We will return to this point in the final section of this chapter.

The Inspection Process

On both the industrial side and the municipal and private side of MOE's regulatory clientele, the frequency of inspections is largely a function of regional personnel's trust of the particular establishment and the nature of the particular problems. Priority is given chiefly to ensuring that the conditions and terms of new approvals are implemented on schedule rather than in continuous follow-up inspections.⁴⁶ In industrial abatement, inspectors' visits are sometimes announced in advance. Generally, however, there is no system of computer assisted cyclical visitations as is the case in the Ministry of Labour (see Chapter 3). Also in contrast to the Ministry of Labour, MOE has no basic procedures book for its inspectors, though it does put them through basic short training courses.

About fifty percent of the workload of an inspector is reactive or unplanned. District officers for example must deal with an average of one complaint per day usually requiring visits. Officers are also required to do the enforcement of many federal regulations including those for lead, mercury, chlor-alkali, and the like. Additional inspection loads have been placed upon them. First, increased political pressure and concern about waste disposal sites have necessitated more frequent inspections. Second, many regional officers are being handed the responsibility by local health authorities to approve and inspect septic tanks.⁴⁷

Table 2.5 shows that there has been a net decline in MOE'S regional compliance personnel establishment in the past five years, despite the growing workload. Interestingly enough, MOE total person-years have not

TABLE 2.5

MINISTRY OF THE ENVIRONMENT DATA ON COMPLIANCE EXPENDITURES
AND PERSON-YEARS 1975-76 TO 1979-80

<u>Expenditures</u> (\$'000's)	<u>Industrial</u> <u>Abatement</u>	<u>Municipal & Private</u> <u>Abatement</u>	<u>MOE Total</u>
1975-76	2,662	4,065	231,176
1976-77	5,935	5,360	240,286
1977-78	5,642	7,058	269,946
1978-79	3,795	7,899	283,316
<hr/>			
<u>Person-Years</u>			
1975-76	134	221	1,459
1976-77	130	210	1,431
1977-78	127	198	1,398
1978-79	132	201	1,539
1979-80	128	190	1,506

Source: Data provided by Ontario Ministry of the Environment.

declined but rather have increased particularly in 1978-79 and 1979-80. While some of this increased personnel may indirectly help the compliance process, the overall picture which emerges is one of declining support for MOE's compliance activity, the heart of which is field inspection personnel. The expenditure data in Table 2.5 is more difficult to interpret. It shows significant increases for industrial abatement and municipal and private abatement over the full five-year period, but a virtual decline (especially if one uses constant dollars) in 1978-79 and 1979-80. This suggests that MOE bore a healthy portion of the burden of the overall Ontario expenditure restraint program in recent years, a situation parallel to that of the federal Department of the Environment.⁴⁸ In total, one is entitled to conclude that environmental concerns have not been a high priority and that within MOE the inspection capability has declined despite increased workloads and public criticism of MOE's recent efforts.

The inspection picture which emerges is one of an unplanned and often unsystematic operation. Regional offices are being given increased duties but with fewer resources to carry them out. Regional and district officials bemoan the relative lack of planning in their work.⁴⁹ They are certainly aware that any inspection process cannot be fully "systematic." It must always be partly reactive and respond to its clientele and to the communities and regions it serves. They tend to agree however that MOE's practices are on balance too reactive. We will see in Chapter 3 that when compared to the Ministry of Labour this view seems to be a valid one.

It is useful at this point to relate the perceived patterns of the regional office workload to our earlier emphasis on the bilateral nature of the MOE compliance relationship and philosophy. A large part of the field work consists of responding to complaints from citizens. This is the "unplanned" part of the field work but it also represents a potential third party public presence which is not taken advantage of in the compliance process. For example, there does not appear to be any systematic way in which the complaints are assessed and used to feed back regularly (assisted by computer data) into subsequent inspections and follow-up action (especially the latter) once an approval has been implemented for the first time.

The information collected and aggregated by MOE for its compliance activity seems to have some other curious omissions in addition to that of the volume and pattern of public complaints and the failure to link these to planned inspection cycles. One further example concerns the question of the size of firm or municipality. Information on compliance is kept on a regional basis and by industry sectors, but apparently none on the size of firms or municipality. One would intuitively think that the size of a firm would be an important variable in its capacity to comply, and therefore that compliance data on this variable would be useful to have.

A further weakness, only recently rectified, has been MOE's failure to maintain cumulative compliance data over the past several years. When we asked MOE for annual compliance data for the past five years, we were advised that such data were not collected. Instead, we were given data for the last five quarters. It is difficult to imagine how any sense of direction could emerge in the absence of such basic information.

Opinion varies, of course, as to the impact of the size of firm, company, or municipality on the inspection process. Inspectors assert that it makes no difference to the frequency of inspection or to basic methods of inspection. On the other hand, at the approvals stage differences do emerge, primarily because many small firms will often lack the technical expertise that large firms possess. MOE officials find themselves having to be more conscious of cost implications for small firms and (municipalities) and are frequently engaged almost as unpaid consultants to these firms. Many owners of small firms are also more apt to complain to their local MPP or to the Minister to get the MOE "off his back."

Inspectors are quite conscious of the overall "soft push" compliance philosophy of MOE and try first to secure voluntary corrective action by the establishment involved. They are aware that they are more ombudsmen than policemen in their inspection role. A compliance routine exists which has many sensible features to it but which also contains many anomalies which deserve explanation and reform by MOE.

Background and Qualifications of Inspectors

All senior industrial abatement officers in the field are engineers. Senior municipal and private abatement officers are chemical engineers. Most junior level technical personnel in the field are hired from technical programs in community colleges. While data over several years are not available, the opinion of several officials interviewed is that semi- or professional personnel now come from a somewhat wider range of career backgrounds whereas in the early 1970s, when environment programs were in their infancy, field personnel came almost exclusively from industry.

In 1981, the average ages and years of experience and the upper salary limits for MOE field staff were as follows:

	<u>Age</u>	<u>Years Experience</u>	<u>Upper Salary</u>
Field Inspector	33	8	23,984
Field Supervisor	39	14	26,149
Field Engineer	39	9	35,750

There has been very little turnover of staff. Environmental inspectors tend to be much younger than their counterparts in the Ministry of Labour. One does not detect, however, amongst this reasonably youthful corps, any particularly strident environmental missionary zeal as has often been said about the core of EPA inspectors in the more adversarial context of American environmental regulation.⁵⁰ Ontario's now experienced inspectors seem to have settled into their jobs in a workmanlike fashion. Few complaints about low morale were encountered in our meetings with field personnel, though there were, as noted above, concerns about increased workloads amidst declining resources. Salary levels are not a particularly good basis on which to infer either regulatory problems or successes. There are obstacles raised by the low salary levels to future career advancement for regional officials. Thus it is possible to envisage that turnover may be a much greater problem in the future.

Information and Evaluation in the Overall Compliance Process

Further insights into the environmental implementation process can be gleaned through a consideration of the kinds of information communicated between the field offices and headquarters and through the way MOE attempts to evaluate itself. Both information flows and evaluation efforts

tell us a little about how and on what basis MOE tries to answer the final but always difficult question about implementation, namely, "Have we been successful in achieving environmental and regulatory objectives?"

As to basic, formal, non-financial information flows, MOE field offices are required to send periodic summary information to Toronto on program approvals, control orders, prosecutions, and information on the particular high priority or contentious problems of the day. A recent example of the latter is waste disposal sites where inspections have been increased. In addition, of course, Toronto is regularly receiving monitoring data on the Ontario air pollution index. Contained within the information noted above would be data (from approvals and orders) on the cost to the private sector of the installation of abatement equipment. Such data focuses on an issue of growing importance in an era when there is political concern about the economic costs of social regulation.

A further characteristic of MOE's basic information system is that it is not nearly as computerized as the Ministry of Labour's has become. As noted above this has limited MOE's ability to put its inspection visits on a systematic cyclical basis.

It is also instructive to note one further area of data which is not a normal part of information flows and exchange but which may be more important as the regulation of toxic substances increases. These data concern inventory information on chemicals in use, including volumes and locations. Some data of this kind are always collected as a part of the approvals process but are generally viewed as confidential in nature as protected by law. This protection extends to the point where the data could not be shared or given to federal authorities to assist in the develop-

ment of the federal Environmental Contaminants Act.⁵¹ Meanwhile, federal offices are collecting mounds of separate data under this Act, much of which goes unexamined. The question of data about chemicals is a useful example of an issue stressed in Chapter 1, namely, the capacity of interests to marshal principles in a selective way. The principle of the "avoidance of duplication" is utilized to ensure that the federal government does not have its own inspectors. But duplication quickly becomes a virtue when it comes to the assembly and collection of basic data on the marketplace by both levels of government. At the same time many firms complain about the "paper burden" of government.

How then is MOE's information base used for evaluation? How does headquarters know that all is well in the regions? How do Ontario citizens and their elected representatives know that regulation is carried out effectively and efficiently? The simple answer is that no one knows with much certainty the answer to such questions. Is this because MOE environmental managers are incompetent and cannot practise "management by objectives" as the efficient private sector does? Anyone who thinks that this is the cause of the environmental malaise has little comprehension of politics, public policy, or management. The dilemmas of evaluation are real because, as Chapter 1 has shown, the goals and normative concerns are numerous, are rarely ranked in any explicit way, and are frequently in conflict with one another. Process and purpose are entangled in a maddeningly untidy way.

These dilemmas can be illustrated with some examples, some of which are gleaned from the way MOE presents its accomplishments to the world in its annual reports. The first example concerns prosecutions. MOE's annual reports scarcely mention prosecutions. This is because prosecutions

are relatively rare and are genuinely viewed by MOE officials as evidence of failure rather than success. Moreover, prosecutions cannot be launched against those who are otherwise complying with a control order or an approval. MOE's compliance philosophy operates on the basis of the approvals process and regulation by negotiation. On the other hand, some critics would judge MOE's success to be greater the more successful prosecutions there are. These conflicting views are informed by different implicit models about both regulatory success; about what produces reliable permanent change in human behavior; and about where the relative emphasis between the carrot and the stick should lie.

A second example concerns data on volumes of approvals. The 1979-80 MOE annual report notes that MOE processed twelve percent more applications for industrial certificates of approval in 1979-80 than in 1978-79.⁵² The question arises: Is this evidence of greater efficiency (more work done with the same number of staff) or a less effective operation since less time is devoted to assessing each approval?

A third example concerns data on private sector costs. The 1979-80 annual report notes that the costs of control equipment installed amounted to over 78 million dollars for air applications and over 101 million dollars for water applications.⁵³ Given that these data are for one year only they tell us little. But even if data for several years were presented, its interpretation would be contentious. For example, data showing higher private sector costs per application could be viewed by some persons as evidence, if not of ultimate regulatory success, then at least of regulatory vigour. For others, lower private sector costs per application would be evidence of both success and economic prudence. On the

other hand, such data over several years (say a decade) could simply mean that the expensive control equipment was now installed and "second generation" environmental "fine tuning" (by definition, probably less costly) was now under way.

This last example illustrates the importance of the time period selected for the evaluation of implementation and raises the age-old analytical question of how one assesses the final effects of regulatory action from proxy or indirect effects. For example, the 1979-80 annual report plots the Ontario Air Pollution Index, a measure of ultimate effect over a ten-year period. It shows a steady downward trend on a province-wide basis, an indication of regulatory success.⁵⁴

Other possible indicators, including most of the earlier examples cited above, are, at best, indirect indicators or criteria. Moreover, few of them assess process questions such as the quality of environmental hearings or the fairness of the approvals process (that is, the capacity to take into account the unique circumstances of firms and municipalities).

We cite these examples (and there are many more) not to suggest that evaluation is impossible or that MOE officials are without regulatory worth. Rather, we point out in particular concrete ways how implementation and enforcement are activities embedded in a world of very real conflict about ideas. These conflicts defy our normal inclination to view the regulatory world as one of benign "valueless" routine.

CONCLUDING OBSERVATIONS

Our analysis of Ontario's environmental standard-setting, implementation, and enforcement has not covered all aspects of MOE's activities. We have out of necessity had to deal with selected but, we think, representative aspects of its regulatory role. The analysis leads to several broad conclusions and issues for reform. Several of these are best seen in the light of comparisons of practice within the Ontario government itself. Some of these are not fully examined until Chapter 3 and 4 of this study but are appropriately referred to here as part of the analysis of the environmental sector, since they relate to some inadequacies in current MOE practices.

The central dilemma of environmental regulation in Ontario was stressed in our review of the main provisions of the statutes. These statutes include a general prohibition clause and provide for prosecution of those who violate the standards which are derived from the authority of the statute. At the same time, prosecution cannot occur if individual firms or institutions are complying with approvals and orders. The approvals process essentially involves a myriad of individual contractual bargains reflecting the different circumstances of each firm or municipality and the different time periods involved to allow compliance to occur. The general rules and the specific case situations are of course not always in conflict but at any point in time they frequently can be. Neither the standard-setting nor the implementation activities of MOE can avoid dealing with these conflicts. The contradictions are inherent in the statute and in the very nature of social regulation and its economic consequences on private decision-makers.

It is apparent that in offering our own concluding observations we are caught on the horns of the same dilemmas. We therefore can only suggest a number of interconnected issues of concern that affect and involve the efficiency and effectiveness, and the process and purpose, of regulation. In Chapter 5 we will link these issues to all three sectors examined in this study.

Standard-Setting

MOE's standard-setting processes have evolved with experience but (in comparison with the Ministry of Labour's recent practices) involve too closed a process with grossly inadequate opportunities for public involvement. This presents a paradox even within MOE since the Ministry has accorded far more public input into decision processes regarding single projects (under the environmental assessment legislation) than it has for the more general standards and guidelines which govern them.

MOE's practices should be revised at least along the lines now practised by the Ministry of Labour. There should be greater statutory assurances built in to ensure that groups and communities can comment upon proposed standards and guidelines and that MOE must then publicly respond to the written submissions and the presentations made to it.

It is essential that these processes apply to guidelines as well. It is likely that more of the proposed air "standards" will have the characteristics of guidelines because of greater scientific uncertainty. On the water resources side, guidelines and objectives have always been relied upon. Guidelines, however, have a legally less secure position in

the processes used by the Ontario government. This is unjustifiable since guidelines often seem to have the same effects as regulations in practice.

When presenting its proposed standards for public comment, and later when responding to public briefs, MOE should be required to include, and make available to the public, its background scientific and technical papers (or a summary of them) and data or other arguments on which it assessed the economic and financial effects (costs and benefits) of these proposed standards or guidelines. The claimed benefits, costs, and technical controversies of proposed standards and guidelines have clearly been a part of the "private" politics of regulation. There is, therefore, no reason why they cannot and should not be part of the public politics of environmental regulation.

There is of course one clear consequence of these procedural suggestions, namely, that it will take a longer period of time to make regulations. The process will by definition be slower, but hopefully more deliberate and publicly informed than it has been, especially as it begins to deal with the mammoth world of toxic substances.

A corollary to the procedural reforms is the question of the need for an advisory council or similar intermediary body to provide a basis for more constant non-governmental involvement in environmental policy and regulation. On balance, we believe such an advisory council would be useful. Its mandate could be similar in nature to that of the Advisory Council on Occupational Health and Occupational Safety which advises the Ministry of Labour. The council's role could be especially useful in an important respect, It could help suggest priorities for dealing

with future environmental hazards. This is a difficult but essential task and is the subject of a separate study by the authors prepared for the Royal Commission on Asbestos. The council's work in this respect would have to be closely linked to that of the Advisory Council on Occupational Health and Occupational Safety (examined in Chapter 3).

Implementation and Enforcement

We have stressed in this chapter that MOE's overall compliance philosophy is less clear and articulate than that of the Ministry of Labour. This may be partly attributed to the fact that MOE has not been subjected to the search light of public criticism, especially by a commission of inquiry as has the Ministry of Labour. MOE has certainly been an object of controversy throughout its brief history but not in the focused way that the Labour Ministry has been. As we noted in Chapter 1, the Ministry of Labour's "internal responsibility system" was the central philosophical premise of the Ham Commission, and was the reason for its recommendation that compliance be centred in the Labour Ministry rather than the Ministry of Natural Resources where jurisdiction over the safety of mines had previously resided.

It is essential to stress, however, that a far more important reason for the different state of MOE's compliance philosophy is that MOE must function in what is effectively a direct bilateral regulatory relationship with its main client, the industrial firm (or other establishment concerned). In contrast, the Ministry of Labour must interact in a multi-lateral way in a labour-management nexus that forms the fulcrum of

the responsibility system in occupational health and safety. Public interest groups cannot be viewed in practical or political terms to be the "third party" in the environmental field as unions are in the labour field. Individual citizens do, of course, complain to MOE offices about environmental problems, but we have pointed out that these complaints do not appear to be fed back in any systematic way into the MOE inspection cycle. In short, there is no well-developed third party in environmental compliance with anywhere near the degree of power or organized presence as is provided by unions in the labour field. There is, moreover, no natural well nurtured alliance between unions and public interest groups whose interests and concerns about health and safety might otherwise, at least in theory, have much in common.

Because of this fundamental political fact there is far less actual presence of, or potential for, the role of "internal responsibility" systems, or self-policing, in the environmental field than in the labour field. This affects compliance in important ways. It could, for example, suggest that, ceteris paribus, visible and frequent inspection is more of a necessity in the environmental field than in the labour field. This need for more inspection would be true especially if alternative instruments or approaches were not available or were politically unattractive. For example, it has often been suggested, as noted in Chapter 1, that economic incentives be used for some kinds of effluents. Industries would be forced to internalize pollution costs in this "economic" way. Politically, however, it requires governments to sell the idea of "polluters paying to pollute," a concept not easily marketed by politicians.

Because these quasi-market remedies are unlikely to be politically effective and because of the bilateral nature of environmental regulations, we believe that visible inspection is an even more essential element of environmental compliance than in the labour field.

Our research and the above-noted normative considerations both suggest that MOE's inspection system is inadequate in two major ways. First, the system of inspections and inspection cycles should be put on a more computer assisted basis to allow for less ad hoc, unplanned inspection activity and to allow for far more follow-up inspections once approval certificates have been complied with in the first instance. Second, significantly increased staff resources are, in our view, clearly necessary if MOE regional offices are to be more actively engaged and are seen to be so engaged in the increased inspection activity called for above. This is especially necessary in the realm of waste disposal sites, chemical inventories and use, and toxic substances generally. MOE's recently established Hazardous Contaminants Office is obviously a step in the right direction but needs to be given far more political support within MOE than it presently has. We have drawn attention to the relative decline in the MOE person-year compliance establishment in recent years despite the inadequacies in the inspection activity described above. We know of no scientific answer to the question of "how much" new field staff is needed. However, we can see no viable alternative to increased inspection capability given the bilateral nature of the compliance relationship and the new demands for compliance which we think MOE should be required to meet.

The analysis in Chapter 4 of the asbestos in Ontario schools case shows that the regulation of waste disposal sites is a decidedly weak link in the environmental chain both at the standard-setting end and especially at the implementation end of the regulatory continuum of activities.

In respect of the regulation of chemicals and the successful future operation of the federal Environmental Contaminants Act, we see little likelihood of progress as long as there are legal obstacles between federal and provincial sharing of data on chemical inventories or patterns of use, both for new and existing chemicals.

We also note that there is a fundamental lack of even the most basic elements of accountability when both federal and Ontario official reports fail to provide any information which would inform Canadians about whether the provincial governments are adequately enforcing federal environmental regulations. MOE carries out inspections for the federal government but it is an added inspection task on top of an already burdensome compliance load. There is little public basis on which to be confident that it is being done well.

In leaning strongly towards a need for a much greater MOE inspection capability, we are also taking into account a further reality, stressed throughout this chapter, namely, that the "object" of inspection is not a homogeneous firm, but rather numerous types of firms operating in different production, physical, and economic circumstances. This will always mean that regulation in this field will be a process involving numerous discrete and unique bargains. It is the bilateral nature of these bargains that makes inspectors and regulatory "cops" more necessary in this field relative to other regulatory domains.

NOTES TO CHAPTER 2

1. In addition to the sources cited below, analysis in this chapter is based on confidential (not for individual attribution) interviews with over 20 officials in the Ontario and federal environmental departments at both the headquarters and field levels. Regional and district officials from three regions with widely varying degrees of industrialization were interviewed so as to obtain views in several regional circumstances.
2. See Ian Burton and Roger McCullough, ed., Living with Risks: Environmental Risk Management in Canada (Toronto: University of Toronto, Institute for Environmental Studies, forthcoming Spring 1982) and David Estrin and John Swaigen, Environment on Trial, 2nd ed. (Toronto: Canadian Environmental Law Association, 1978).
3. For a recent review see Economic Council of Canada, Reforming Regulation. (Ottawa: Supply and Services Canada, 1981), Chapter 8.
4. See Science Council of Canada, Policies and Poisons, Report No. 28 (Ottawa: Supply and Services Canada, 1977).
5. See Economic Council of Canada, op. cit. note 3, and Michael Whittington, "The Department of the Environment," in Spending Tax Dollars, ed. G. Bruce Doern (Ottawa: Carleton University, School of Public Administration, 1980), Chapter 4.
6. Several sources were used as the basis for the description in this section, including Estrin and Swaigen, op. cit. note 2; Annual reports of the Ontario Ministry of the Environment; Great Lakes Water Quality Board, First Report of the Toxic Substances Committee (Ottawa: International Joint Commission, 1981).
7. Great Lakes Water Quality Board, op. cit. note 6.

8. Ontario Ministry of the Environment, Annual Report 1979-1980 (Toronto: Queen's Printer, 1980).
9. Interviews.
10. Interviews.
11. Ontario Ministry of the Environment, Hazardous Contaminants Office, "Assessment of Toxic Substances Legislation in the Province of Ontario," mimeographed (Toronto: Ministry of the Environment, 1980), p. 1.
12. Ibid., pp. 2-3.
13. The Ontario Water Resources Act, R.S.O. 1980, c.361.
14. Ontario Ministry of the Environment, Annual Report 1979-1980, op. cit. note 8, at p. 18.
15. Ibid., pp. 19 and 20, 54 and 55. For a critical review see Reg Lang, "Environmental Impact Assessment: Reform or Rhetoric?" in Ecology Versus Politics in Canada, ed. William Leiss (Toronto: University of Toronto Press, 1979).
16. See Whittington, op. cit. note 5, at Chapter 4.
17. See Economic Council of Canada, Reforming Regulation, op. cit. note 3, at Chapter 7.
18. Great Lakes Water Quality Board, op. cit. note 6, at p. 59.
19. Ibid., p. 56.
20. See P. Nemetz et al., Regulation of Toxic Chemicals in the Environment, Regulation Reference, Working Paper No. 20 (Ottawa: Economic Council of Canada, 1981).
21. This priority-setting exercise is examined in greater detail in G. Bruce Doern, The Politics of Risk: The Identification of Toxic and Other Hazardous Substances in Canada, Study No. 4 prepared for the Royal Commission on Asbestos. (Toronto: The Commission, 1982), Chapters 4 and 5.

22. For a critical review see R. Lang, op. cit. note 15, at pp. 233-251.
23. Canada Department of the Environment, Annual Report 1979-1980 (Ottawa: Supply and Services Canada, 1980).
24. Interviews.
25. Canada Department of the Environment, op. cit. note 23.
26. See L. Buffa and P.M. Higgins, "An Overview of Industrial Water Pollution Control in Canada" (Paper presented at the International Water Conservancy, Air-Pollution Control and Noise Abatement Exhibition, Jonkoping Sweden, 25-29 September 1978).
27. Interviews.
28. See Great Lakes Water Quality Board, op. cit. note 6.
29. Ibid., pp. 1-12.
30. These are examined in G. Bruce Doern, Regulatory Processes and Jurisdictional Issues in the Regulation of Hazardous Products in Canada, Background Study No. 41 (Ottawa: Science Council of Canada, 1977).
31. Interviews.
32. See C. Bruce Martin and P.C. Kupa, "The Rationale, Methodology and Administration Used in Ontario to Determine Ambient Air Objectives and Emission Standards" (Paper presented at Annual Meeting of the Air-pollution Control Association, Toronto, 19-24 June 1977), p. 5.
33. Ibid., p. 4.
34. Ibid., pp. 5-6.
35. Ibid., p. 6.
36. See Ibid., p. 7 and Ontario Ministry of the Environment, "Procedure for the Operation of the Environmental Air Standards Setting Committee" (Toronto: 7 November 1978).

37. Interviews.
38. The description of the sequence is taken directly from Ontario Ministry of the Environment, "Procedure for the Operation of the Environmental Air Standards Setting Committee," op. cit. note 36, augmented by our interviews.
39. Ibid., Appendix pages 2 and 3.
40. Ontario Ministry of the Environment, Annual Report, 1979-80, p. 55.
41. Ibid., p. 55.
42. Interviews.
43. Ontario Ministry of the Environment, Annual Report 1979-1980, p. 20.
44. Ibid., pp. 20-21.
45. Interviews.
46. Interviews.
47. Interviews.
48. Interviews. See also Chapter 5.
49. Interviews.
50. See Paul H. Weaver, "Regulation, Social Policy and Class Conflict," The Public Interest 50 (Winter 1978): 45-64.
51. Interviews.
52. Ontario Ministry of the Environment, Annual Report 1979-1980, p.20.
53. Ibid., p. 20.
54. Ibid., p. 25.

C H A P T E R 3

OCCUPATIONAL HEALTH AND SAFETY REGULATION AND IMPLEMENTATION

The second regulatory realm to be examined is that of occupational or workplace health and safety. In contrast to the environmental field which has thus far escaped study by public inquiry, the workplace regulatory sector in Ontario has been the subject of two inquiries since 1975, the Ham Commission¹ and the Burkett Inquiry.² Both were inquiries about safety in mines but inevitably cast their analytical net to the broader field of workplace health and safety. Partly as a result of these inquiries, particularly the Ham Commission's work, the concepts, ideas, and practices involved in occupational health and safety have received a more focused debate and have been the object of more concerted efforts at reform.

The organization of this chapter parallels that of Chapter 2. We first review some of the basic concerns of the Ham Commission which set the scene for present Ontario legislation. We then provide a brief legislative and institutional profile. The standard-setting process is then examined, followed by an analysis of implementation and enforcement. Finally, we offer some concluding comments about the occupational health and safety sector, keeping in mind the physical and institutional links with the environmental sector.

In general, workplace health and safety has a longer regulatory history than environmental regulation. Public policy was directed to legislation on workers' compensation to help those already the victims of industrial work-related injuries.³ These programs were accompanied by educational activities to help prevent accidents. Legislation was also developed in what is now called the traditional safety fields, usually under several different statutes, to cover mining, construction, and general industrial safety. Only in the late 1970s was legislation adopted which focused on health hazards in the workplace as opposed to the previous emphasis on immediate physical safety hazards.

The Ham Commission in particular was a forceful catalyst for change. It was critical of the breakdown and/or absence of what it called the "internal responsibility" system within industry and the lack of jurisdictional focus within the Ontario government. These criticisms led to the consolidation of occupational health and safety activities in the Ministry of Labour in 1976, and the passage of The Occupational Health and Safety Act in 1978.⁴

From the 1920's onward, three Ontario ministries had major responsibilities for occupational safety. Development of legislation, inspection and enforcement pertaining to industrial establishments and construction were carried out by the Ministry of Labour, while that pertaining to mining was carried out by the Ministry of Natural Resources. Occupational health support services were provided by the Ministry of Health.

The system of occupational health and safety was based then on the assumption that the employer was legally and financially responsible for the health and safety of workers; that this was the sole responsibility

of management; that industry was largely capable of regulating itself and willing to do so, and that the role of the inspectorate was to encourage and support this self-regulation. This system largely excluded workers from a share in regulating occupational health and safety. It underestimated the clash between safety and profits in the priorities of management, and it accepted a relatively weak role for government. The consequence was weak regulations with a great deal of discretion left to the inspectorate.

The Ham Commission stressed that there was no established means by which workers could assess conditions of work or through which the insight derived from workers' collective knowledge and experience could be utilized in monitoring and preventing health and safety hazards. It recommended the establishment of joint labour-management health and safety committees and the appointment of worker-auditors.

The basic function of the worker-auditors, selected from experienced workers, was "to contribute to management and subsequently to the mining inspectorate the judgements of experienced workers on conditions pertaining to health and safety in the operations designated for such review."⁵ The worker-auditors' role was to be an advisory one: "The intention is to provide management with an additional form of audit of operations while informing the mining inspectorate of the details of the review."⁶ The joint labour-management health and safety committees proposed by Ham were also to be given other consultative and advisory roles. They would be concerned with policies, system performance, operations, and conditions rather than specific safety and health problems.

Ham was also concerned that the inspectorate capability was lacking. He felt the inspectorate should have "not only the professional capacity to comprehend the full range of mining operations but also the standing to influence the commitment of senior management to the effectiveness of the internal responsibility system." These attributes were not present in the then existing regulatory regime. As a group, the inspectors were not accorded a high status in the system. This made it difficult to recruit and retain qualified people. Within the various departments involved, the number of inspectors was usually inadequate for the task given to them. In discussing the Mines Engineering Branch Inspectorate then in the Ministry of Natural Resources, the Ham Report said:

...the inspectorate has, in the Commission's view, been understaffed and inadequately funded for its role both in accident prevention and protection of the health of workers, and no doubt these circumstances have affected its morale.⁷

The Ham proposals saw the new role of the inspectorate in the context of exposing the whole inspection and regulation process to worker scrutiny and advice.

The recommendations of the Ham Report triggered a process of consolidation of all Ontario health and safety legislation. Acting on Recommendation 117 of the Commission, the government established, on December 16, 1976, an Occupational Health and Safety Division in the Ministry of Labour that was charged with responsibility for: The Industrial Safety Act, 1971; The Construction Safety Act, 1973; The Mining Act, Part IX; The Silicosis Act; and The Employee Health and Safety Act, 1976, which resul-

ted in the establishment of the Division itself. On December 15, 1978, The Occupational Health and Safety Act (Bill 70) received royal assent and replaced all of the aforementioned statutes.⁸

Although many of the concepts incorporated into The Occupational Health and Safety Act are rooted in the Ham Report, the legislation was drafted to cover a much broader constituency than workers in mines. Accordingly, many of the recommendations made by Ham, in particular those concerned with special circumstances existing in mines, were not included in the 1978 statute. Other differences include the role of worker-auditors and health and safety committees. We will examine these briefly.

The concept of worker inspection, as conceived by Dr. James Ham, was altered by the Act. While Dr. Ham suggested that at least two of the worker members of the health and safety committees be worker-auditors, he concluded that it would be "inexcusable for problems to be presented to the health and safety committee or to the mines inspection branch before the internal system of direct responsibility has been given the opportunity to act."⁹ The suggestion of worker inspection by Ham was designed to provide for correction of workplace anomalies by management, but according to the Burkett Inquiry, "the current method of worker inspection weakens the relationship between the worker-inspector (auditor) and the first line supervisor, as contemplated by the Ham Report."¹⁰ The approach proposed by Dr. Ham integrated the system of worker inspection with the supervisory function by moving the focus for correction of hazards away from health and safety committees to the supervisor. However, according to the Burkett Inquiry the legislation has tended "to move the focus for the resolution of workplace anomalies from the direct responsi-

bility system to the health and safety committee."¹¹ Ham had categorically recognized the "prerogative of managerial responsibility" and had not recommended that health and safety committees assume decision-making authority with respect to the performance of work. Rather, committees were seen as "means of improving the quality and sensitivity of the decisions emanating from the direct responsibility system."¹² The Burkett Inquiry maintained:

...health and safety committees continue to operate at the pragmatic level....Health and safety committees which are primarily concerned with the identification and correction of workplace anomalies carry with them the potential to foster negative worker attitudes and to reinforce the adversarial mentality....If a committee deals with worker-initiated complaints to the exclusion of other activities, the worker and his representative find themselves in the ongoing role of initiator, and management finds itself in the ongoing role of responder.¹³

As envisaged by the Ham Report, the more vital role of health and safety committees was to reach beyond the identification and correction of specific workplace conditions and support the direct responsibility system by:

- providing a mechanism through which workers contribute to the formulation of policy and programs, the assessment of new facilities, equipment and processes and the setting of safety goals and objectives. The understanding, attitude and commitment of the worker, as a critical participant in the direct responsibility system is thus improved.

- providing a mechanism by which worker insights and concerns with respect to management policies, programs and the working environment are communicated to management.¹⁴

According to the Burkett Inquiry, committees have failed to reach beyond specific workplace conditions because to some extent the statutory framework put in place has burdened health and safety committees with specific anomalies.¹⁵

In addition to the basic concepts embedded in the Ham Commission report, it is essential to keep in mind in this chapter the other concerns set out in Chapter 1. We stressed there the absence of any agreed theory of accident causation¹⁶ in the realm of traditional safety concerns and indicated how differences in views and practice emerged from efforts to conceptualize the even broader realm of occupational health and safety. One view saw it as a problem of "man at the centre" where the presumption of blame rests more on the worker. A contrary view sees "work at the centre,"¹⁷ where the presumption of blame rests more on the nature of work itself and hence on the production system. These views in turn were¹⁸ closely linked to broader ideological criticism of, or a defence of,¹⁹ capitalism and the profit motive.

The analysis in Chapters 1 and 2 has also alerted us to the important political and institutional fact that the occupational health sector involves much more of a multilateral or tripartite (business, labour, and regulator) set of fundamental relationships as opposed to the bilateral one in existence in the environmental field (industry and regulator).

ONTARIO LEGISLATIVE AND INSTITUTIONAL PROFILE

The Occupational Health and Safety Act is the statutory foundation for regulating health and safety aspects of the workplace in Ontario. Evolving out of the statute's basic concept of "internal responsibility" are specific sections dealing with the rights and responsibilities of employees and workers, the worker's right to refuse hazardous work, the establishment of joint health and safety committees and representatives, and the control of toxic substances.²⁰

Among the employers' responsibilities set out in the Act are the requirement to provide the employee with proper information, instruction, and competent supervision by qualified persons. The workers' responsibilities include following safe work practices, using protective equipment as required by his employers, and a duty to report hazards or contraventions of the law to his supervisor.²¹

Procedures are set out for the worker and the employer to investigate and resolve the circumstances of a refusal to work. If a stalemate ensues, a Ministry of Labour inspector must be called in to investigate and help resolve the situation. Reprisals by the employer against a worker who refuses work according to these provisions are not allowed.

A joint health and safety committee must be established in workplaces with twenty or more workers, except on construction projects, in offices and retail stores, residential buildings, libraries, museums, art galleries, restaurants, hotels, motels, licensed premises, theatres and clubs. If the employer and the workers cannot agree on the establishment of a joint committee, the Minister can be requested to order the appointment of a committee or representative. In any case, a committee is required if a substance designated by regulation is used in the workplace or where a Ministry order for control of a toxic substance is in effect. Many small businesses may not have to establish committees or appoint representatives, but where there are fewer than twenty workers, voluntary committees may be established.

Both committees and representatives have rights to information on potential hazards and to inspect the workplace, and duties to participate in the investigation of accidents and refusals to work. Both can make recommendations to the employer but have no authority to enforce them.

We will refer to the functioning of these committees in our analysis of implementation and compliance. We shall do so, however, only in the context of how their role alters the job of Ministry of Labour inspectors. A study of the committees per se was deemed to be beyond the scope and the resources of this study.

In contrast to environmental legislation, the Act explicitly empowers the Ministry of Labour to control the use of toxic substances in the workplace, including provisions for the "designation" of specific substances for separate regulation. The Act specifies that substances new to Ontario cannot be introduced into the workplace unless permitted by the Ministry of Labour.

These are the general provisions in the Act but it is also necessary to appreciate in some detail the specific powers conferred by the statute. Section 7(6) sets out the powers of the worker health and safety representative. He or she may inspect the physical condition of the workplace not more than once a month or at such intervals as a Director may direct. The employer is obliged to provide the representative with such information and assistance as may be required. The health and safety representative is also given the power in section 7(7) to identify "situations that may be a source of danger or hazard to workers" and to make recommendations or report his findings to the employer, the workers, and the unions representing the worker. Section 8(2) confers similar powers on the joint health and safety committees required under the Act. These are examined later in the chapter.

Section 20 of the Act confers powers on a Director (of the Ministry of Labour) to control toxic substances which are used or intended to be used in workplaces and where such substances "in the opinion of the Director" are likely to endanger the health of a worker. A Director may order the employer by notice in writing that the use of such a substance be prohibited, limited, or restricted in such manner as the Director specifies, or is subject to specified conditions regarding administrative control of work practices, engineering controls, and time limits for compliance. Employers may appeal such orders within fourteen days to the Minister. No hearing is required prior to issuing an order, nor is one required in any appeal procedure.

Section 20(8) specifies the matters to be considered in making such a decision or order. These are:

- (a) the relation of the agent, combination of agents or by-product to a biological or chemical agent that is known to be a danger to health;
- (b) the quantities of the agent, combination of agents or by-product used or intended to be used or present;
- (c) the extent of exposure;
- (d) the availability of other processes, agents or equipment for use or intended use;
- (e) data regarding the effect of the process or agent on health; and
- (f) any criteria or guide with respect to the exposure of a worker to a biological, chemical or physical agent or combination of such agents that are adopted by a regulation.

We will relate these criteria in our discussion of the role of cost-benefit analysis later in the chapter.

Another important power regarding toxic substances is the provision in section 21(1) that except for purposes of research and development, no person shall manufacture, distribute, or supply any new such substances unless he first submits to a Director notice of his intention to do so.

Section 21(2) then provides an assessment process. It states that:

Where in the opinion of the Director, which opinion shall be made promptly, the introduction of the new biological or chemical agent or combination of such agents referred to in subsection (1) may endanger the health or safety of the workers in a work place, the Director shall require the manufacturer, distributor or supplier, as the case may be, to provide, at the expense of the manufacturer, distributor or supplier, a report or assessment, made or to be made by a person possessing such special, expert or professional knowledge or qualifications as are specified by the Director, of the agent or combination of agents intended to be manufactured, distributed or supplied and manner of use including, the matters referred to in sub-clauses 28(1)(1)(i) to (vii).

In principle this section is similar to the early warning provisions of the federal Environmental Contaminants Act outlined in Chapter 2 although it is related to workplace health effects as opposed to the broader environment. We will identify particular problems of compliance with this section, problems tied to the inexorable links between environmental and, occupational hazards.

The Occupational Health and Safety Act also gives the Lieutenant Governor in Council the authority to make regulations in numerous other detailed aspects of safety and health in the workplace. These are listed in Appendix B. It is important to stress that the Act itself does not specify the processes required to make these regulations except in respect of paragraph 14 on "designated substances."

Section 22 prescribes that to designate a substance, the Minister

- (a) shall publish in The Ontario Gazette a notice stating that the substance may be designated and calling for briefs or submissions in relation to the designation; and
- (b) shall publish in The Ontario Gazette a notice setting forth the proposed regulation relating to the designation of the substance at least sixty days before the regulation is filed with the Registrar of Regulations.

A designation process has been begun by the Ministry of Labour concerning seven substances, including asbestos. This process will be examined in the section on standard-setting.

The Act calls for certain penalties for contravention of the Act or regulations. The penalties set out in section 37 include a fine of not more than \$25,000 or imprisonment for a term of not more than twelve months, or both.

There are other detailed provisions in the Act to which we will refer later. These include the workers' right to refuse work where his health and/or safety are endangered. The point to stress in this brief statutory profile is that in both the standard-setting and implementation/enforcement realms, the statute contains the seeds of its own ambiguity and conflicts and thus reflects the stated and unstated compromises which led to its passage in the post-Ham Commission environment in 1978. We will point these out in several of the sections below when we discuss further the role of worker auditors, inspectors, the relations between branches of the Ministry of Labour, and the role of prosecutions in the context of the "internal responsibility" philosophy enunciated by the Ham Commission. The Occupational Health and Safety Act is a complex statute whose effects defy easy analysis.

In terms of organization the legislative and policy changes have resulted in the establishment of the Occupational Health and Safety Division in the Ministry of Labour, headed by an Assistant Deputy Minister. The Division is composed of six branches: Industrial Health and Safety, Construction Health and Safety, Mining Health and Safety, Occupational Health, Standards and Programs, and Special Studies and Services (see Chart 3.1). The first three assume responsibility for developing and delivering field health and safety services to workers and employers while the remaining branches provide general support and consultant services to the line branches. In the main, the Industrial, Construction, and Mining Branches are engaged in:

- (a) inspection of work premises and practices for compliance with health and safety legislation;
- (b) advising and counselling employers, workers, and suppliers of materials and equipment on the requirements of the legislation and more generally on health and safety concerns;
- (c) enforcing the legislation;
- (d) maintaining descriptive records of Branch activities and the problems dealt with; and
- (e) contributing to the development of policy and legislation.²¹

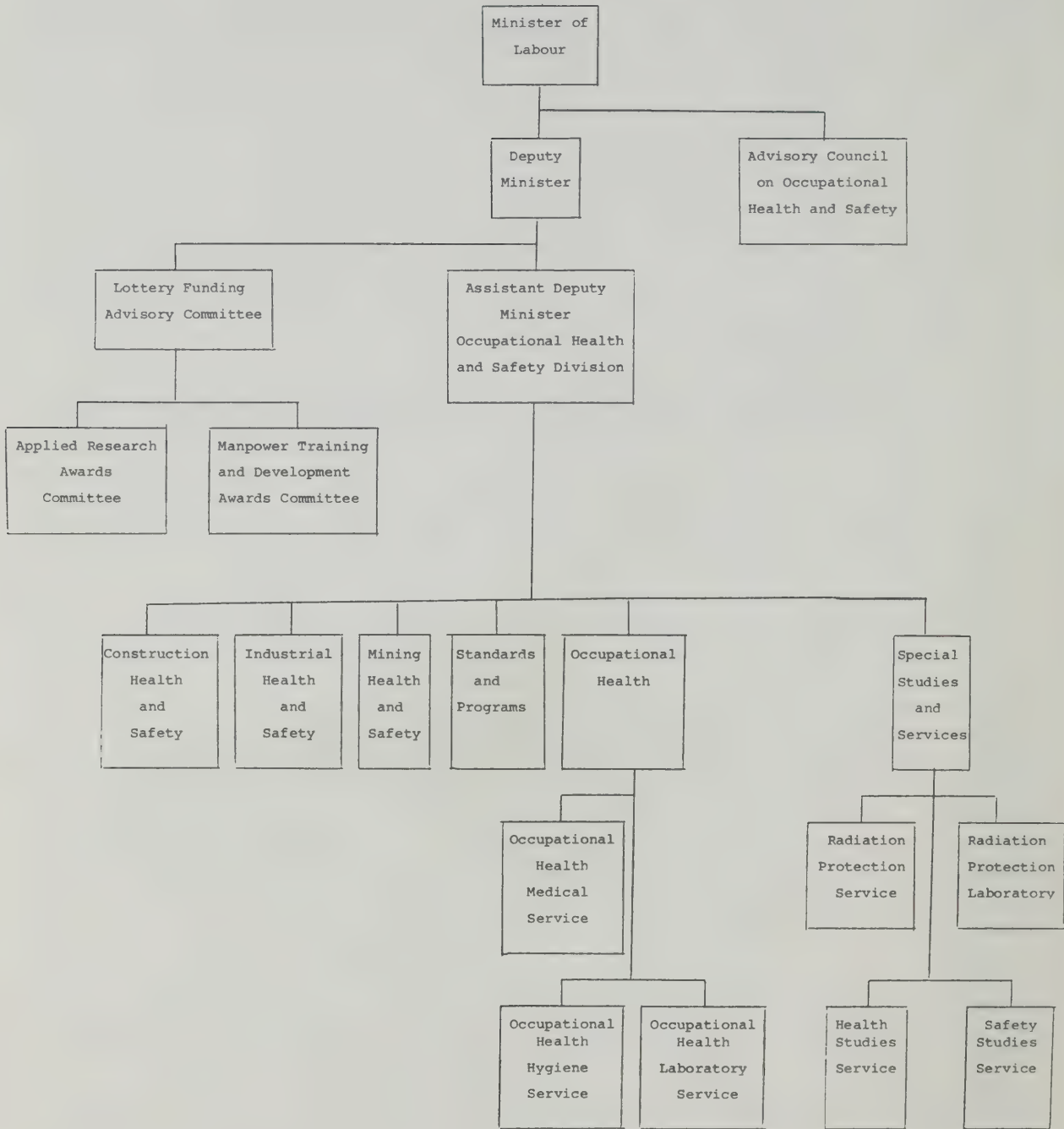
A more detailed examination of the tasks, responsibilities, and operations of each of these branches will be presented in our analysis of implementation and enforcement later in the chapter.

The new legislation also led to the establishment of the Advisory Council on Occupational Health and Occupational Safety (ACOHOS). The Council consists of between 12 and 20 part-time appointed persons drawn from labour, business, and scientific and professional groups. It has a general mandate to advise the Minister of Labour regarding the programs

CHART 3.1

ORGANIZATION OF OCCUPATIONAL HEALTH AND SAFETY DIVISION

MINISTRY OF LABOUR



Source: Ministry of Labour, Written submission to the Royal Commission on Asbestos, #43, February 1981, p. 28 (appears as Chart 1 therein).

of the Ministry of Labour in occupational health and safety, including advice on matters brought to the Council's attention by outside groups and citizens. Now ending its third year of operation, the Advisory Council has tendered advice on such diverse issues as policies and principles for occupational health and safety programs for small establishments, policies and principles concerning economic impact analysis of occupational health and safety statutes and regulations, and occupational hearing loss, to name only a few.²²

FEDERAL LEGISLATION AND INSTITUTIONS

There are nine federal departments and agencies administering sixteen pieces of legislation dealing with occupational health and safety. The focal points of federal activity, however, are Labour Canada, which performs the regulatory and facilitative functions specified by Part IV of the Canada Labour Code and the Department of National Health and Welfare which provides supportive services to the various federal and provincial programs.

The Canada Labour Code

The Canada Labour Code is perhaps the most important among the federal acts, regulations, and codes governing the safety and health of employees. Unless superseded by another act or regulation enacted by Parliament, all federally regulated industries are subject to the provisions of Part IV of the Canada Labour Code.²³ Regulatory ordinances promulgated under the authority of the Act include building safety, coal mine safety, electrical safety, fire safety, noise control, and sanitation.²⁴ There is no specific provision for toxic substances.

In general, the regulations promulgated under the Canada Labour Code are based on performance criteria rather than on detailed specifications and procedures. For example, section 3 of the Canada Machine Guarding Regulations requires that:

Every employer shall ensure to the extent that is reasonably practicable that all machines used by his employees are safe without the use of removable machine guards.²⁵

As with regulations promulgated under the Ontario Occupational Health and Safety Act, the ambiguities created by the terms "reasonably practicable," "safe limits," "suitable," and "adequate" create a wide latitude within which regulatory provisions might be enforced. While the administration of the Code and its provisions rests with Labour Canada, enforcement has traditionally been undertaken primarily by provincial inspectorates, except in British Columbia.²⁶

While the Canada Labour Code supports the concept of health and safety committees, the creation of such bodies is not mandatory. One of the major controversies surrounding the federal legislation is this provision for establishment of joint health and safety committees at the discretion of the Minister of Labour. Section 84.1(1) of the Canada Labour Code states:

The Minister may, from time to time, by notice in writing require or authorize any employer to establish or cause to be established a safety and health committee for a federal work, undertaking or business operated on or carried on by him or for any parts thereof where, in the opinion of the Minister, conditions therein warrant the establishment of such a committee.

Accordingly, it is argued that the legislation does not provide for a uniform opportunity for all employees to participate in influencing the quality of their work environment. Even if a committee is struck, either at the initiative of employers and unions or upon the direction of the Minister, its role in monitoring the workplace is left vague by the legislation.

A particular example of the effects of this vagueness concerns health and safety committees in the uranium industry. When the Ontario Occupational Health and Safety Act was referenced under the Canada Labour Code, the appointment of joint committees remained a matter of federal jurisdiction. Much to the chagrin of the United Steelworkers, the Canada Labour Code stipulated that management had the responsibility to appoint members to the committees. The USWA objected and the issue remains unresolved. However, committees have successfully been established for the railways and airlines.²⁷

Under the Canada Labour Code, the right to refuse work exists where the worker has "reasonable cause to believe" that he is in "imminent danger." This differs from the Ontario Occupational Health and Safety Act, where this right exists where the worker has "reason to believe" that a situation exists which is "likely to endanger" himself. In spite of its more limited application, the right to refuse dangerous work under federal law is circumscribed by a lack of legislative protection for employees against reprisals, including the total absence of a statutory requirement for the payment of compensation for the time the employee refused to work. However, the Canada Labour Relations Board has partly remedied the

lack of worker protection by employing a broad interpretation of the term "imminent danger" and by preventing the imposition of penalties against those who invoke the right to refuse dangerous work.²⁸

Labour Canada and Federal Standard-Setting and Compliance Practices

Regional Operations and the Occupational Safety and Health Branch are the organizations within Labour Canada involved with occupational health and safety. Regional Operations is primarily responsible for program delivery and the Occupational Safety and Health Branch is responsible for program/policy development, industrial hygiene, laboratory support, occupational medicine, and safety engineering.²⁹

One of the most serious problems for federal regulation of health and safety is the conundrum of overlapping jurisdictions particularly in the public sector. For any single hazard there may be several levels of authority involved. A pertinent example is the issue of asbestos in airports. Treasury Board has mandated National Health and Welfare with monitoring health and Labour Canada with monitoring safety in public sector activities. Accordingly, asbestos falls under Health and Welfare jurisdiction; airport employees under the Canada Labour Code; and the contractor, who has the job of removing or encapsulating the asbestos, falls under provincial jurisdiction. Fortunately, this problem is slightly less acute in the private sector, where Labour Canada is responsible for both health and safety.

Although the principal focus of this study is Ontario, certain features of federal standard-setting and enforcement practices deserve attention. As was the case in Chapter 2 when we examined the federal De-

partment of the Environment, these features will be summarily listed without further comment.³⁰

- (a) Federal regulation of dangerous substances is through the Canada Dangerous Substances Regulations which rest upon requirements based on Threshold Limit Values of the American Conference of Government Industrial Hygienists (ACGIH). If it is not reasonably practicable to prevent harmful exposure of workers, personal protective equipment may be provided.
- (b) A socio-economic impact assessment (SEIA) is required for proposed regulations with an impact on the private sector exceeding 10 million dollars. SEIAs are conducted internally by the Department. Grain elevator regulations have gone through an entire SEIA process. Revisions to the Canada Labour Code involve consultation with employees and employers.
- (c) Several proposed revisions to the Canada Labour Code are about to be introduced. These are likely to include: clarification of the wording for work refusal; and mandatory health and safety committees in firms with twenty or more employees.
- (d) The compliance philosophy of Labour Canada, based on 1968 policy, is preventative. Over time, however, the federal Department has become primarily a reactive organization.
- (e) With very limited resources, the Department cannot realistically promote anything resembling Ontario's "internal responsibility system."
- (f) Inspectors go into an establishment initially to respond to a complaint. There is no "cyclical review" as exists in Ontario. Inspectors are performing the task of law enforcement officers, not facilitators of ethical behaviour.

- (g) Federal inspectors suffer from the handicap of having to wear three hats at once. They are responsible not only for health and safety, but for labour standards and fair wages. Less than one-third of their time is spent on health and safety concerns. Although the federal government is responsible for only ten percent of the total establishments in the country, it is estimated by Labour Canada officials that it would be necessary to double existing resources to achieve ten percent penetration of establishments every ten years.
- (h) Inspectors are intended to be generalists but they have proven to be more effective on the labour standards and fair wages side than on the health and safety side. Inspectors generally have no university education and are drawn from the private sector. There is no health and safety procedures manual for inspectors.
- (i) Since 1975 the federal inspectorate has been significantly decentralized. The set-up in Ontario with field offices and Head Office closely woven together contrasts sharply with the situation at the federal level where the four regions operate more or less independently. There are very few structured reporting forms for monitoring performance in the field.
- (j) Inspections involve the inspector first visiting the employer/employee/union that lodged a complaint. The officer will usually take this opportunity to do a thorough inspection of the plant. Where contraventions are found, the inspector can "red tag" the defective machinery which cannot be used again until compliance with the order occurs. Verbal directives are followed by written orders. In the event of non-compliance, steps towards prosecution are taken. However, prosecution is regarded as regulatory failure.

(k) The Department is essentially involved in a "catch-up" game with the rest of the country, attempting to follow innovations in the health and safety arena in the rest of the country.

The Canadian Centre for Occupational Health and Safety

The Canadian Centre for Occupational Health and Safety (CCOHS) was established in 1978. The establishment of the Centre was part of the federal government's political response to appease the labour movement angered by the imposition of wage controls in the 1976 to 1978 period. The CCOHS became a small part of the federal government's 14-point package for labour. It was clearly not an aggressive new initiative in occupational health and safety. It is neither a regulatory agency nor a research agency. The CCOHS's role is purely informational and advisory in nature, and it has been given only very limited resources. The CCOHS has begun some useful work in disseminating information in response to requests from organized and non-unionized workers.³¹

STANDARD-SETTING AND REGULATION-MAKING PROCESSES

In examining MOL's standard-setting and regulation-making processes it is essential to keep in mind the dual nature of the statutory regime which flows from The Occupational Health and Safety Act. As noted in the earlier legislative profile there are in effect two processes: one for designated substances and the other for all other regulations. The former requires a process of consultation (to be described and analyzed below) and the latter requires no special consultation and is governed only

by Ontario's legislation or statutory instruments. The special designated substances process was included as a central feature of the Act to deal with concern over toxic substances or broader "health" hazards as opposed to safety issues.

It is also essential to appreciate that the processes envisaged by the Act embrace not just health standards per se but also control procedures. The differences between standards and procedures were discussed in Chapter 1 and will be even more evident when we review the proposed asbestos regulations now winding their way through the new MOL designated substances process. The setting of guidelines is not necessarily governed by either of the above processes which flow from the Act.

The organization of this section of the chapter is as follows. We will first discuss the processes used in the past. This is followed by a step-by-step review of the new designated substances process using asbestos as a brief case study. We then focus on the criteria used to derive standards in the new process, including the role of cost-benefit analysis. Finally, we note the roles of particular bodies and agencies in the new process (as revealed in the case study) and explore issues such as the role of scientific and technical evidence and federal-provincial relations.

Past Regulation-Making Processes

In contrast to the Ministry of the Environment, which has attempted to devise a classification for different kinds of standards and guidelines and has used standards extensively, the Ministry of Labour has relied in the past almost exclusively on guidelines.³² During the past

two years, however, it has launched the special standard-setting and regulatory processes for designated substances. Seven substances have been designated: asbestos, lead, mercury, silica, isocyanates, vinyl chloride monomer, and noise. The Ministry is therefore in the process of gaining experience in the use of standards and formal regulations per se in the realm of hazardous substances.³³ The Ministry (and previous ministries that had jurisdiction) has, of course, utilized regulations in the traditional areas of safety. These were promulgated according to the basic procedures of the Ontario legislation on regulations and statutory instruments and were consolidated and revised following passage of The Occupational Health and Safety Act.

It is important to stress, however, that the Ministry of Labour will undoubtedly need to continue to rely on guidelines because there are hundreds of substances that have to be potentially regulated and because the new standard-setting process is by definition very time consuming, even though it is not burdened by the elaborate rule-making requirements of the American regulatory system.³⁴

To the extent that guidelines are necessary the Ministry will rely, where appropriate, on Threshold Limit Values (TLV's) as recommended primarily by the ACGIH. This has been the practice with hazards such as asbestos. The TLV's have no legal status in Ontario but are used as a guide to good practice. TLV values have been used as a basis for issuing orders where they are contravened in specific workplaces.³⁵

TLV's are developed in three forms, defined as follows:

- (a) Time-weighted average: is an exposure level determined by averaging air concentrations of a contaminant experienced over a normal eight-hour workday or 40-hour work week, making due allowance for the length of time of individual exposure levels;
- (b) Short-term exposure limit: is an average exposure level determined over a 15-minute period - such a TLV concentration should not be permitted more than four times during a work day with at least 60 minutes between exposures; and
- (c) Ceiling value: is a level of exposure that should not be exceeded even instantaneously.

The time-weighted average is the form most often referred to in applying the values. However, it should be noted that exposures above the average are permitted as long as: they do not exceed the short-term exposure limit or ceiling values; and they are compensated for by an equivalent period of exposure below the time-weighted average level. The thresholds are reviewed annually by the ACGIH.³⁶

It is also important to note that in parallel with the environmental regulatory process, where guidelines are used (or where deference to guidelines developed by other bodies such as the ACGIH is common), they are not subjected to the kind of Canadian or Ontario based public processes of review, criticism, and commentary required by law in the case of formal standards.

The Designated Substances Process

Chart 3.2 portrays the stages in the standard-setting process for designated substances as envisaged by the Ministry of Labour in 1980. It is reasonably self-explanatory. One difference in procedure that has emerged since 1980 is the commitment to hold public meetings after the "Ministry of Labour Review Process" during which time Ministry of Labour officials outline how and why they have responded to the briefs and presentations made to them. A second difference is that the Advisory Council on Occupational Health and Occupational Safety has become involved in advising on the regulations, after the revised regulations have been prepared following the public meeting. Several other points about the MOL process should be noted, especially when we compare the Ministry of Labour's approach to the MOE process, described in Chapter 2.

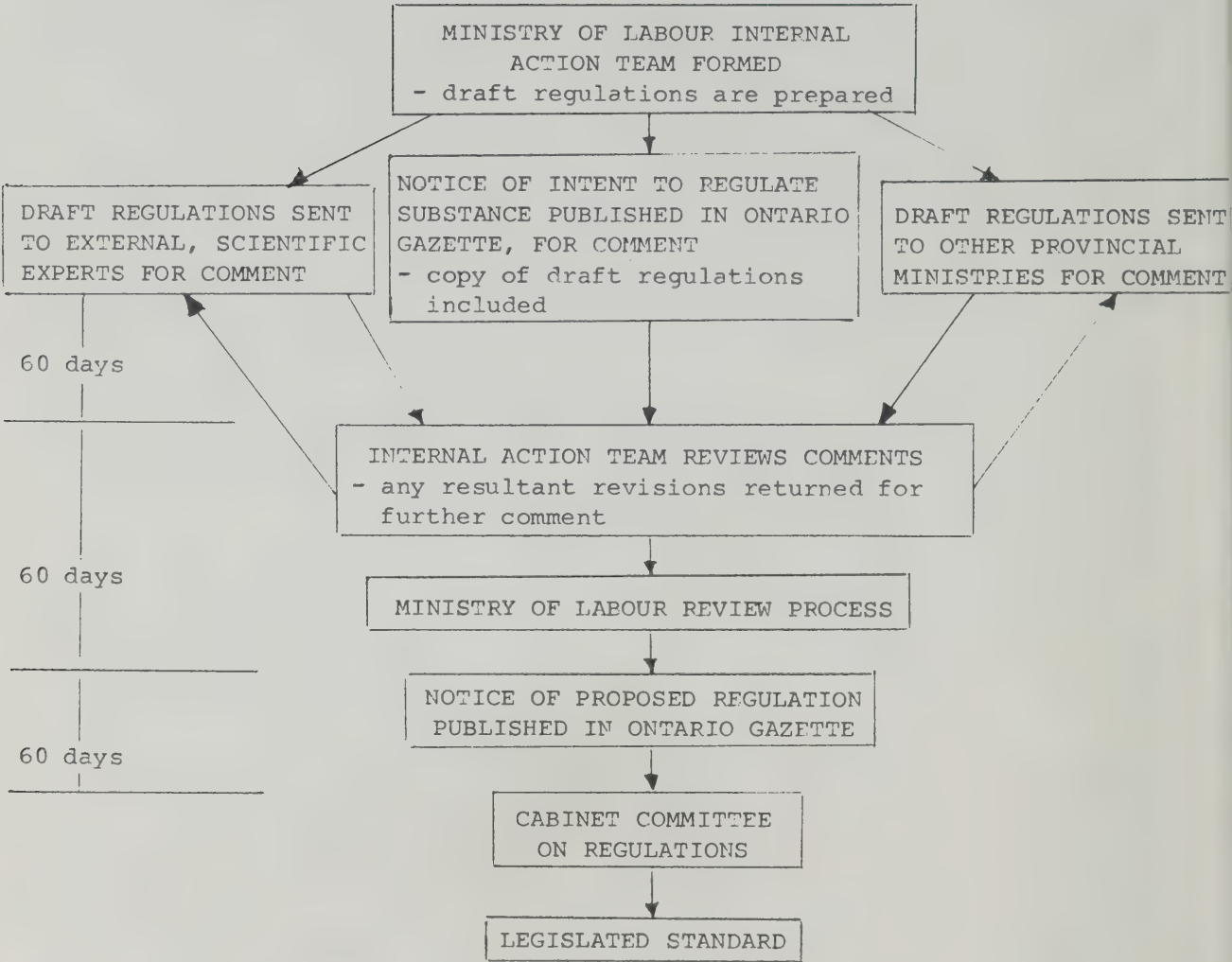
First, there is as yet no permanent standards committee in MOL, as there is in MOE, charged with the technical determination of standards. The Ministry of Labour has preferred thus far to use different teams of experts and has also relied somewhat more on outside consultants to prepare reports on which the Ministry's draft regulations are based. These reports have been made available to interested groups by depositing them in the Ministry of Labour library. At the early technical stage of the process the Ministry of Labour has been more willing than MOE to test its views by consulting outside expert opinion.

Second, the process to date has taken much longer than the periods indicated in Chart 3.2. A minimum period of six months was envisaged but the process to date has taken two years. This is undoubtedly due in part to inexperience and the newness of the process to all parties concerned.

CHART 3.2

MINISTRY OF LABOUR

STANDARD-SETTING PROCESS



The processes are not the judicialized, formal adversary kind of American rule-making or even of regulation-making in certain other sectors of Canadian economic regulation (e.g., the CRTC, NEB, CTC). Rather, the process is consultative in nature, and hence procedure is more casual, and less certain. The length of time required will undoubtedly vary with each substance. The asbestos standard-setting process resulted in over fifty briefs requiring Ministry review and analysis.³⁷ Other proposed designated substances have produced a voluminous response as well.³⁸ Significantly, none of the original seven designated substances have, at the time of writing, had final regulations fully and legally promulgated despite two years of work on them.

The Designated Substances Process: Asbestos as a Case Study³⁹

Asbestos was one of the seven substances included in the Notice of Intention to regulate which appeared in the August 16, 1980, issue of The Ontario Gazette. It contained a package of prescribed exposure limit standards and procedural codes for respiratory equipment, measuring airborne asbestos fibres, and medical surveillance of asbestos workers. During the period allowed for public briefs, some 54 respondents participated at least with written presentations. The additional 150 briefs submitted on the other six proposed designated substances also influenced the asbestos regulations since they dealt with general issues such as medical surveillance and respiratory equipment that were important for all the substances.

On September 22, 1981, the Ministry of Labour held a public meeting to announce and explain the changes in the proposed asbestos regulations. These will be sent to the Advisory Council on Occupational Health and Occupational Safety for further comment and then will be published in final form in The Ontario Gazette. At the September 22nd meeting, senior MOL officials explained that the 54 submissions were analyzed in relation to the sections of the proposed regulations. The suggested changes contained in the briefs were reviewed with the Deputy Minister of Labour, T.E. Armstrong, Assistant Deputy Minister, Dr. Ann Robinson, and legal counsel, Paul Hess. MOL's internal deliberations also included consideration of a health effects report prepared by Dr. M. Finkelstein, an expert in the Special Studies and Services Branch of MOL. Dr. Finkelstein spoke at the public meeting but his report was not made public.

At this public meeting, senior MOL officials stressed that the proposed regulation on asbestos was well-accepted by most of the respondents.⁴⁰ One central area of dispute was the definition of asbestos "as a fibrous asbestos material." Industry wanted a more precise definition and obtained it in the revised regulations. A second controversy arose over the time-weighted average exposure limit. Industry opposed the proposed 1 fibre/cm³ time-weighted average for chrysotile and preferred the present 2 fibres/cm³ guideline. MOL retained the more stringent 1 fibre standard, concluding that the "evidence of significant health risk to workers at 2 fibres/cm³ is conclusive."⁴¹ There was opposition from labour to the setting of different exposure limits for different types of asbestos. MOL nonetheless set different maximum allowable concentrations: 5.0 f/cm³ for chrysotile, 2.5 for amosite,

and 1.0 for crocidolite. MOL officials acknowledged there was strong scientific controversy among experts about this issue but the Ministry had acted in any event.

Space will not allow us to examine in detail all the changes made to the asbestos regulations as a result of the public comments and briefs. It is instructive, however, to refer briefly to a few other issues which arose in relation to asbestos but which affect other designated substances as well. These are of interest to us not just because of what they tell us about the process of making regulations, but also because of the issues they raise for subsequent implementation. At the September 22nd, 1981 meeting, MOL officials outlined five such issues, as follows:

- (a) A number of respondents apparently misunderstood the concept of an assessment followed by a specific asbestos control program and hence, the application of the regulation.
- (b) Another issue arose in response to section 11, which dealt with the use of respirators to control exposure to asbestos. Many industry groups wanted greater flexibility in the use of respirators.
- (c) There was some conflict on the role of the joint health and safety committee during the assessment and during the development of the asbestos control program.
- (d) Section 7 provided for medical examinations under the asbestos control program "but only with the consent of the worker." Employers argued that a worker's refusal to participate in the medical program could severely restrict the effectiveness of the control program.
- (e) The provisions which allowed release of the results of a worker's medical examinations and tests, and of his medical records, to his authorized agent were interpreted by some respondents as a violation of medical confidentiality.⁴²

We will touch immediately on two of these issues, namely, the requirement for assessments and the question of medical records.

Sections 6 and 7 of the proposed regulation on asbestos contains the following provisions:

6. (1) Every employer to whom this regulation applies shall cause an assessment to be made in writing of the exposure or likelihood of exposure in a work place of a worker to the inhalation or ingestion of asbestos.
 - (2) In causing the assessment to be made, the employer shall consider and take into account such matters as,
 - (a) the methods and procedures used or to be used in the processing, mining, use, handling or storage of asbestos;
 - (b) the extent and potential extent of the exposure of a worker to the inhalation or ingestion of asbestos; and
 - (c) the measures and procedures necessary to control such exposure by means of engineering controls, work practices and hygiene practices and facilities.
 - (3) In causing the assessment to be made, the employer shall consult thereon with the joint health and safety committee and the committee may make recommendations with respect to the assessment.
 - (4) A copy of the assessment made by an employer shall be given by the employer to each member of the joint health and safety committee.
7. (1) Where the assessment discloses or would, if made in conformity with section 6, disclose that a worker is likely to inhale or ingest asbestos and that the health of the worker may be affected thereby, the employer shall develop, establish, put into effect and maintain measures and procedures to control the exposure of the worker to asbestos and shall incorporate the same into an asbestos control program.⁴³

Industry groups criticized section 6 because it did not provide sufficient guidance. Industry suggested that assessments be carried out only when the exposure limit is exceeded. Labour opposed this. The new regulation does not tie the assessment process to exposure limits and hence labour's view has in general been sustained. The new regulation also contains a requirement that the employer must make the assessment in writing and must provide each member of the joint health and safety committee with a copy.

Where the assessment discloses that a risk to workers' health exists, the employer must develop and put into effect and maintain a control program. The existence of a control program triggered by an assessment raises some interesting problems which parallel our discussion in Chapter 2 of the MOE "approvals process." The controls programs of different firms will be different and therefore will represent a series of discrete bargains. They will nonetheless be agreed to in the context of across-the-board exposure limits or standards. Once again we have a probable clash between horizontal equity (general standards) and vertical fairness (numerous discrete bargains). Both are an understandable feature of the asbestos program but they are in partial conflict with each other, and they will profoundly affect the criteria for evaluating whether the overall program will be judged later as a success.

One significant difference between the MOE program approval process and the assessment-control program provided for in the proposed regulations on asbestos is that labour, through joint health and safety committees, is directly involved in the bargaining. This is clearly not the case with the MOE process.

A second issue which illustrates the connection between the standard-setting process and future compliance problems concerns medical surveillance. The 1980 draft regulations contained a provision that medical examinations and tests be conducted only with the consent of the worker. This provision was supported especially by labour primarily on the grounds of the sanctity of personal health information. Employers objected that a medical program would not be effective without full participation of the labour force. MOL sided with industry on this issue and proposes to delete the "consent of the worker" provision.⁴⁴ Two desirable principles clashed and a preference was expressed and resolved by MOL, at least insofar as the regulation itself is concerned. The compliance problems, however, are not necessarily resolved in practice because there will still be an underlying concern as to possible loss of employment to particular workers if certain health effects are discovered in a surveillance program.

In general, MOL's response to the public briefs has been a reasonably even-handed one with "concessions" made to both labour and industry in the revised regulations. Both sides have complained about the lengthy process involved, but both can point to changes which they favoured. This was a learning experience for everyone concerned. It is difficult to conjecture whether MOL will, in the future, engage tactically in an explicit "splitting the difference" strategy. That is, one can speculate whether the process will evolve so that in the first round of proposed regulations, MOL proposes regulations which leave room for modest change so that the process itself can exhibit, and be seen to produce, changes in the second round which take some suggestions from labour and some

from business. This outcome would not necessarily be undesirable since one of the purposes of a consultative approach is to induce such bargaining. Another purpose, however, is to ensure the production of intelligent information since no one has perfect knowledge of this field of regulation. Before commenting further on this even broader aspect of the regulation-making process, it is necessary to note briefly other characteristics of the "designated substances" process.

The asbestos regulation did not involve any elaborate or formal written cost-benefit or economic impact assessments, nor does The Occupational Health and Safety Act explicitly require them. The provision in Ontario guidelines for the preparation of Cabinet documents was not followed in this case. Our separate study, "Standard-Setting and Implementation in Ontario: The Views of Major Institutions," shows clearly that labour opposes formal cost-benefit analysis, arguing that health effects should be the only criterion to be applied.⁴⁵ We will comment at length on this question in Chapter 5.

It is important to note that the Deputy Ministers' Committee on Occupational and Environmental Health is not directly involved in the final stages of promulgation. Regulations go finally to the Regulations Committee of Cabinet, a body not concerned per se with the substantive content of regulations but rather with legal and other concerns arising from Ontario's statutory instruments legislation. The Advisory Council on Occupational Health and Occupational Safety is involved after the public meeting process. Some unions have been critical of this in that if the ACOHOS suggests further changes and they are adopted by MOL then unions have no further opportunity for comment.⁴⁶

Scientific Evidence and Repetitive Technical Controversies

In Chapter 1 we drew initial attention to an issue that is bound to affect future standard-setting processes but which Ontario Ministry of Labour officials are only beginning to contemplate. This issue is the question of scientific evidence and how it is handled in standard-setting processes. We described briefly in Chapter 1 the OSHA policy on carcinogens, a policy established primarily to avoid needlessly repetitive debates in American rule-making hearings about scientific and testing data and, hence, to speed up the standard-setting process, especially in light of the awesome list of potential carcinogens on the future regulatory agenda.

In 1980, the Ministry of Labour asked the Advisory Council on Occupational Health and Occupational Safety to report on this vexing question. The report is not yet public but it is clear that it will not address the broader procedural implications as the OSHA policy did.⁴⁷ It will focus on the narrower, but obviously important questions of the kinds of scientific tests that might be used as evidence of the existence of hazards. This includes a search for methods that are less expensive than animal tests and for rules about corroborative scientific evidence. The former affects the speed of testing that might be possible in the future, and the latter deals with the fundamental question of the burden of proof, a question on which scientific norms and legal/political norms are bound to collide.

While institutional and legal differences mean that it is not necessary for Ontario to adopt the OSHA policy in its entirety, we see no alternative to the need to adopt a policy which contains the principles of the OSHA policy pertaining to testing and corroborative data. The early experience with standard-setting for the seven designated substances already in our view shows the presence of repetitive debate about scientific evidence. Standard-setting in Ontario would seem to us to be doomed to a future of agonizing slowness unless this is rectified by adopting that part of the OSHA Cancer Policy dealing with testing and corroborative data.

The relationship of provincial standards and processes to federal standards and processes should also be kept in mind even though these are difficult to characterize. As pointed out earlier, federal occupational health is jurisdictionally divided among several departments. It is even more dependent on the use of guidelines than Ontario and of course affects only a limited number of workers since the provinces have prime jurisdiction in labour relations. Only one set of standards, those on grain hazards, has gone through a full-scale SEIA exercise.⁴⁸

That the Ontario designated substances process is agonizingly slow is already evident. Waiting in the wings are other hazardous substances drawn from an initial list of over 50 existing substances compiled by the Ministry of Labour. This list has been devised from a variety of sources

and lists, including those already in existence in the U.S. and other jurisdictions.⁴⁹ Little thought has been given to date as to how new substances which enter Ontario workplaces will be identified, assessed, and perhaps regulated.

The Ministry of Labour deserves considerable credit for the overall manner in which it has embarked upon the new processes. The processes, however, confront the Ministry and all other groups involved in so-called democratic standard-setting with powerful paradoxes. The decision (probably quite justified) not to adopt American-style legally binding hearings produces the uncertain halfway house of "consultative" standard setting. The process is better than no consultation at all but it is still based on an uncertain faith that better processes (even slow ones) will produce better health and safety. Many groups would like to have swifter regulatory processes, but alas they often do not trust bureaucrats and ministers, especially if they judge that a decisively taken decision is likely to go the wrong way and be contrary to their interests.

Standards on particular hazards are bound to be influenced to some degree by inter-provincial comparison. The federal government is likely to be a forum for some of the inevitable comparisons that arise when, for example, province A adopts moderate standard X, while another province B, where the hazard/industry is economically marginal, adopts a tougher standard Y.

While our study has not focused on the federal level, we have no difficulty in concluding that standard-setting processes at the federal level are considerably less thoughtfully developed than in Ontario, despite the warts evident in recent Ontario's standard-setting experiments since 1980.

IMPLEMENTATION AND COMPLIANCE

It is evident from the analysis above that implementation and compliance action under The Occupational Health and Safety Act involves a complex network of behaviour by public officials and numerous private individuals. Though such action functions within the basic tripartite (government, business, and labour) relationship stressed earlier in this chapter, the actors involved are in fact more numerous. Implementation and compliance involves action by MOL inspectors and health advisers, joint health and safety committees, worker health representatives, labour unions (the leadership and the membership), company doctors and private physicians, and corporate management from the supervisory level up to the chief executive officer. It is also essential to stress that perceptions of the main institutions involved are important. They cloud assessments of how well this system is working in practice. Mixed perceptions are all the more likely to be present because the new system is only a few years old.

Describing and analyzing the compliance system is no easy task. It cannot be glibly understood in a paragraph or two. In this section of the chapter we attempt only a partial assessment of the compliance processes required by The Occupational Health and Safety Act. It is a partial assessment because we focus more on what MOL does rather than on the roles of other actors involved. We first examine the compliance philosophy captured in the phrase "internal responsibility system" and describe its main elements and the obligations of its constituent parts. The organizational and operational structure and personnel of the Ministry of Labour are then described and critically examined. This is followed by a description and analysis of the MOL inspection process.

Compliance Philosophy: The Internal Responsibility System

Although the term does not appear anywhere in The Occupational Health and Safety Act, one cannot understand the Ontario enforcement and compliance regime, or for that matter the legislation itself, without an appreciation of what the internal responsibility system is, and the position that it occupies in the administrative framework of the Ministry of Labour.

Internal refers to the workplace as defined in Section 1(28) of the Act and includes: a construction site, a factory, an industrial establishment, a logging operation, a mine, a mining plant, a project, or a shop. The people involved in that internal system are: the employer or owner, the supervisor, the worker, the health and safety representative, the joint health and safety committee, and the labour union. The basic concept underlying this internal aspect of the internal responsibility system is that "the people who know best about the protection of workers are the ones who are working at their particular job."⁵⁰

The term "responsibility" refers to the obligations of the persons in the workplace to carry out the duties imposed upon them by the Act. These responsibilities and duties are unique to each individual person in the workplace but are complementary in that they can deal with the same problem but at different levels, defined by the scope of authority that each person possesses.⁵¹ In addition to the duties specified in the Act under sections 13 to 19, there is a "moral responsibility" to go beyond the minimum requirements of the law and provide for the protection of all workers in a manner consistent with good ethical conduct.⁵² The elements that tie the units of the responsibility system together are shared information, a joint review structure, and Ministry support measures.

The sharing of information is required if employers and workers are to carry out their duties effectively. Shared information involves: the posting of all inspectors' reports [sections 29(5) and 29(6) and section 20(3)]; the responsibility of the worker to report problems to his/her employer or supervisor [section 17(1)]; the employer's responsibility to make information on toxic and other hazards known [sections 14(2) and 16(2)]; and the requirement of the employer to provide relevant statistical data to workers and their representatives (section 9).⁵³ In the words of one Ministry official:

...if this sharing of information is clearly established and carried out in a frank and open way it will lead to a strengthening of mutual confidence and will influence the control of irresponsible actions.⁵⁴

The several elements of the review system such as health and safety committees, health and safety representatives, and the refusal to work process are intended to serve as a "step by step process to ensure that the concerns identified in the workplace do not become lost because nobody knew who would follow up to ensure the effective resolution of problems."⁵⁵

Support measures are the final structural element that binds together the internal responsibility system. They include Ministry regulations, orders and injunctions, appeal procedures, information collection, prosecutions and penalties, prohibition of reprisals for refusal to work and pre-development review (the submission of information so that problems can be identified and controlled at the design stage).⁵⁶ These support measures are intended as an external administrative system to stimulate,

review and to support the internal responsibility system. They are designed as "merely a means, first to assist the responsible majority and secondly to achieve that same level of responsible action by the irresponsible and uncaring minority."⁵⁷

In its recent report, the Joint Federal-Provincial Inquiry into Safety in Mines and Mining Plants in Ontario (the Burkett Inquiry) divided the internal responsibility system into two subsystems: organizational units with direct responsibility and organizational units with contributive responsibility:

Direct responsibility for safe production extends to those who are directly responsible for the organization of work, the design of work practices, and the manner in which, and the conditions under which, work is performed. Direct responsibility falls to worker, supervisor, management and executive; the line organization. Contributive responsibility extends to those who, although not directly responsible for the performance of work, are in a position to contribute to safe production through consultation, advice, audit, inspection, etc. Contributive responsibility falls to health and safety committees, safety departments, unions, the Mines Accident Prevention Association of Ontario and the Mining Health and Safety Branch.... The concepts of direct responsibility and contributive responsibility, when incorporated into a system for safe production, combine the critical elements of accountability and involvement.⁵⁸

The Ham Report, upon which the 1978 reforms were predicated, left no doubt that management had ultimate authority over the functioning of the company's line organization and hence was the most important participant in a company's safety system. Health and safety committees were not seen as assuming decision-making authority with respect to the performance of work. Rather, they were viewed as "a means of improving the quality and

sensitivity of the decisions emanating from within the direct responsibility system and as a mechanism to improve worker attitudes. Direct responsibility extended from the chief executive officer through management to the first line supervisor and finally to the worker. Thus, Ham recognized the prerogative of managerial responsibility while supporting the concept of worker participation through joint review structures. To buttress this argument, he pointed out that:

This same base of managerial authority would exist in any form of revised industrial democracy involving worker participation in management. The focus of ultimate accountability has been well stated by the United Steelworkers of America as follows: "The employer must accept the full legal and moral responsibility to provide a safe and healthy workplace, protective equipment, safety and health training and safe work procedures."⁵⁹

The Ham Report went on to say that in performing a consultative and advisory role, the health and safety committee would be: "a forum of consultation between those with the ability to contribute and those accountable for deciding what is to be done."

While emphasizing the accountability of management for health and safety matters, Dr. Ham stressed:

Someone accountable for making a decision does not impair his decision-making role by consulting those who can contribute to it. Such consultation is indeed very likely to improve both the quality and acceptability of the decision.⁶⁰

The Ministry of Labour describes The Occupational Health and Safety Act as a "problem solving tool" designed to set "performance standards to satisfy what should be the mutual concern of the employer and worker in making the workplace a safe and healthy place." In the Ministry's view:

The act does not create a heavy handed group of government officials who go about issuing instructions, orders and penalties with reckless abandon, but because of the concept of mutual concern places the emphasis on the establishment of an internal responsibility system within the workplace.⁶¹

Under the internal responsibility system, then, employers and employees have a shared role in ensuring occupational health and safety.

According to the Ministry:

The establishment of an effective Internal Responsibility System is an essential first step to prevent injury or health deterioration. As an Internal Responsibility System improves, the level of compliance will move from enforced compliance through self compliance to ethical compliance.

To encourage this Internal Responsibility System to develop, the role of facilitator has been given to the inspector, who will identify, evaluate and review the actions of labour and management on a regular basis. This will facilitate the first step by identifying areas where the Internal Responsibility System can be improved.⁶²

The Ministry defines enforced compliance as situations where legal action must ultimately be taken because the employer refuses to abide by work orders issued by the inspector. The Ministry sees itself as having failed if an order must be litigated in the courts. Self-compliance occurs where an employer, after having been made aware of the law through the issuance of an order, complies without recourse to the legal system. Less coercive than enforced compliance, self-compliance is a signal that the health and safety inspectorate commands legitimacy. Nevertheless, at this stage in time the internal responsibility system is seen by the Ministry to have not fully matured. Ethical compliance, the ideal of the

Ministry, involves the least intervention by the inspectorate. The issuance of orders is not necessary in this ideal setting because employers and employees working together in workplace committees come to understand the law, acknowledge its legitimacy, and strive to go beyond the minimal requirements stipulated in the regulations.⁶³

It is an article of faith within the Ministry that ethical compliance must ultimately be relied upon for the effective implementation of the law. An alert and responsive internal responsibility system that works things out for itself means that government does not have to construct a bureaucratic leviathan that would, in any event, identify only a small proportion of potential health and safety hazards. Elaborating on this point most Ministry officials claim that increasing the number of inspectors by two- or three-fold would have very little impact on the total number of circumstances or opportunities for the occurrence of an accident or illness.⁶⁴ According to this scenario, because there are an almost infinite number of opportunities for accident or illness to occur in the workplace, a few hundred inspectors could identify only an infinitesimal proportion of potential hazards. Where accident prevention and health protection is strictly management's responsibility, there would still be only 300,000 employers and supervisors to deal with an infinite number of opportunities for illness or accident.⁶⁵ The internal responsibility system involves workers, trade union representatives, health and safety committees, supervisors, employers -- more than 3 million people -- assisting in health and safety concerns.⁶⁶ The movement towards ethical compliance involves a change in the role of the inspector from a person who only inspects and issues corrective orders to one who

manages and facilitates the internal responsibility system. The new role of the inspector is that of "a manager whose function is to get leverage by managing the activities of all the people [in the workplace] and getting them actively involved in keeping the internal responsibility system alert and responsive to the needs of their own workplace."⁶⁷ We will examine this claim later in the chapter.

Elements of the Internal Responsibility System

The main elements of the internal responsibility are the joint health and safety committees, specific duties and responsibilities of the employer, specific duties and responsibilities of the employees, the right of workers to refuse hazardous work, and prohibitions concerning reprisals that might otherwise have been imposed by employers.

Joint Health and Safety Committees

As specified in section 8(2) of The Occupational Health and Safety Act, employers are required to establish a joint health and safety committee in firms that employ twenty or more workers or when a designated substance exists in the workplace. Health and safety committees consist of no fewer than two members and at least one-half of the membership must be comprised of workers who do not perform managerial tasks.

Employee representatives on health and safety committees must designate a member selected by workers to inspect the physical condition of the workplace. This designated member is also empowered to investigate all accidents resulting in death and serious injury. Where certain occupations are exempted from this requirement (for example, office workers,

construction workers, shop workers, workers in a museum, library, or art gallery), the Minister has the authority to order that a joint health and safety committee be established. Joint health and safety committees represent the organizational vehicle by which employers and employees might co-operate in resolving health and safety problems. Committees have been set up in approximately 6100 of the larger workplaces. Section 8(6) of the Act states that:

It is a function of a committee and it has the power to:

- (a) identify situations that may be a source of danger or hazard to workers;
- (b) make recommendations to the constructor or employer and the workers for the improvement of the health and safety of workers;
- (c) recommend to the constructor or employer and the workers, the establishment, maintenance and monitoring of programs, measures and procedures respecting the health or safety of workers; and
- (d) obtain information from the constructor or employer respecting,
 - (i) the identification of potential or existing hazards of materials, processes or equipment, and
 - (ii) health and safety experience and work practices and standards in similar or other industries of which the constructor or employer has knowledge.

As a corollary to section 8(6), The Occupational Health and Safety Act imposes duties on employers to afford assistance to a joint health and safety committee or health and safety representative in carrying out their functions. Important caveats to note, however, are that the recommendations of the committee are not binding on the employer, and the employer is not required to consult or co-operate with the committee in resolving concerns regarding health and safety matters.

In discharging the functions described above, committees are required to meet at least once every three months. In addition, committees are required to maintain records concerning their proceedings and to provide inspectors with minutes of meetings for review and inspection.

On a construction project, where the number of workers regularly exceeds twenty, or where the Minister orders, the constructor shall require the workers to select at least one health and safety representative from among the workers on the project who do not exercise managerial functions. The health and safety representatives' powers are more limited than those of the joint health and safety committee. The health and safety representative has power under section 7, to inspect the physical condition of the workplace, to identify those situations that may be a source of danger or hazard to workers, and to make recommendations or report his/her findings thereon to the employer, the workers and any trade union representing the worker.

Although resources and lack of time did not allow us to examine the role of the health and safety representative, it is important to note that there is a considerable lack of clarity about the role. The Ham Commission's much clearer concept of worker-auditors is not equivalent to the health and safety representative provided by the Act. The Commission's concept led to expectations especially among labour unions that are not fulfilled by the narrower concept embedded in the statute. The Ham Commission had suggested that there be one worker-auditor for approximately every 25 employees. It linked this number to the supervisor's span of responsibility and suggested that the supervisor accompany the worker-auditor on his monthly inspections. It is to be noted also that

the Ham Commission was primarily concerned about the mining industry and its unique physical characteristics. The Occupational Health and Safety Act applies to all sectors and the worker-auditor concept was watered down in the process.

Employer Responsibilities

In addition to the duty of the employer to afford assistance and co-operation to a joint health and safety committee, there are requirements set out in sections 14 and 15 of the Act including a duty to provide information, instruction, and supervision to a worker to protect the health or safety of the worker. There is also a duty to acquaint a worker, or a person in authority over a worker, with any hazard in the workplace; and in the handling, storage, use, disposal, and transport of any article, device, equipment, or a biological, chemical, or physical agent. The employer must also take every reasonable precaution in the circumstances for the protection of the worker.

Not only employers, but supervisors have a duty to advise a worker of the existence of any potential or actual danger to the health or safety of the worker of which the supervisor is aware and to take every precaution reasonable in the circumstances for the protection of a worker [section 16(2)(a) and (b)].

Employee Responsibilities

The provisions of the Act that pertain to the employee are related to the use of protective equipment as well as the behaviour of the employee in the workplace. Section 17(2) of the Act states that no worker shall:

- (b) use or operate any equipment, machine, device or thing, or work in a manner that may endanger himself or any other worker; or
- (c) engage in any prank, contest, feat of strength, unnecessary running or rough and boisterous conduct.

Section 17(1) requires the employee not only to comply with the regulations and provisions of the Act but also to report any defects in protective equipment, devices, or equipment as well as any contraventions of the Act.

Right to Refuse Dangerous Work and Prohibition of Reprisals

A worker has the right under section 23(3)(b) to refuse to work or to do a particular work where he/she has reason to believe that the physical condition of the workplace or the part thereof in which he/she works or is to work is likely to endanger him or herself. To ensure that employers do not intimidate workers from exercising this right, the employee may report contraventions to the Ontario Labour Relations Board. If the Board concludes that such a contravention exists, penalties or sanctions can be imposed on the employer.

ORGANIZATION AND PERSONNEL OF THE MINISTRY OF LABOUR

Among the actors involved in the compliance process, the Ministry of Labour is our primary object of analytical attention. We will first describe the roles of the various branches in the Occupational Health and Safety Division of MOL, and look at some data on MOL expenditures and personnel. We then discuss the question of the training of inspectors and the relationships among the branches.

Before proceeding any farther, however, it is necessary to stress two broad aspects of MOL as a ministry, both of which are important in understanding its behaviour. First, the Ministry is a ministry of labour and not for labour. The primary function of a labour ministry is to facilitate the conduct of labour-management relations, the focus of which is traditional collective bargaining. In this important sense, the MOL must take an even-handed role between business and labour. The Occupational Health and Safety Division of MOL was established primarily as a result of labour criticism. It is a unit of MOL whose political origins would otherwise suggest at least a moderate "pro-labour" stance, given the conditions it was intended to help remedy. But the Division cannot function in this pro-labour way because of the overall referee role of the MOL. The "internal responsibility" system reinforces this referee role but it is important to note that the referee constraints long pre-date the 1978 legislation.

A second general organizational feature of MOL is that the Occupational Health and Safety Division is an amalgam of units most of which, as we noted earlier, were located elsewhere prior to 1976. An important question therefore is whether these units function as a whole and whether special efforts have been made to foster an integrated inspectorate. In general, we conclude that the Division has not made a sufficient effort to foster a cohesive inspection and operational capability as required by the philosophy embedded in The Occupational Health and Safety Act.

The Role of the MOL Branches

Industrial Health and Safety Branch

This Branch administers The Occupational Health and Safety Act in industrial establishments. Within its jurisdiction are all manufacturing, service, trade, transportation, storage, communications, and other worksites in Ontario, except construction and mining or those which come under the safety and health jurisdiction of the federal government.

The 1978 Act brought under the aegis of the Branch several occupations hitherto outside the jurisdiction of occupational health and safety legislation. Workers in hospitals and other health care institutions, schools, colleges and universities, police, fire, detention and correctional institutions, transportation, and municipalities have been brought under the mandate of this inspectorate through the "extended coverage" clauses of Bill 70. Currently, however, teachers and academic staff in post-secondary institutions do not fall under the rubric of the legislation. Whether or not regulations specific to these groups will be promulgated remains problematical. The Branch must cover about 3.75 million workers.

There are four tiers in the hierarchy of the Branch:

- (a) Head Office: Head office is supervised by the Director of the Industrial Health and Safety Branch. The Director reports to the Assistant Deputy Minister for the Occupational Health and Safety Division of the Ministry of Labour.
- (b) Areas: There are five in Ontario, each headed by an administrator. The area administrators report directly to head office in Toronto.

- (c) Regions: Each area administrator has several regions under his jurisdiction. Regions are headed by regional managers, each of whom have five to ten district officers (inspectors) under their jurisdiction.
- (d) Districts: Each region is divided into districts with at least one inspector. Generally there is an Occupational Health and Safety Officer responsible for the "extended coverage" services of the Branch and an Industrial Safety Officer who inspects all other industrial establishments. As we shall see in the next section inspectors are left with considerable discretion as to the "cycles" (intervals) that he/she visits a workplace.

With the passage of The Occupational Health and Safety Act, the Industrial Health and Safety Branch assumed responsibility for administering the provisions of Ontario Regulation 658/79 (now Regulation 692; see R.R.O. 1980). It contains requirements for notice of accidents, machine guarding, material handling, protective equipment and industrial hygiene.

The regulations for which the Industrial Health and Safety Branch is responsible are based on general performance criteria and, to a lesser extent, on specific details or procedures. As an example of the latter approach, section 15 of Ontario Regulation 692 (1980) states that:

A guard rail shall:

- a) have a height of not less than 107 centimetres above the surface floor, ground or platform on which it is installed;
- b) when constructed of wood, be not less than 38 millimeters x 89 millimeters in cross-section, securely supported on posts not less than 38 millimeters x 89 millimeters in cross-section, the posts being spaced at intervals of not more than 2.4 meters;
- c) have an intermediate rail which, when constructed in wood, is not less than 75 millimeters wide, securely fastened to the inner side of the posts midway between the top rail and the surface, floor, ground or platform on which it is installed;

- d) where tools or other objects may fall on any worker, have a toe-board extending from the floor platform or other surface to the height of not less than 125 millimeters; and
- e) be free of splinters and protruding nails.

However, most regulations are couched in the language of general performance criteria. An example of such a provision is section 21 which stipulates that:

Barriers, warning signs or other safeguards for the protection of all workers in an area shall be used where vehicle or pedestrian traffic may endanger the safety of any worker.

Similarly, section 30 states:

A machine shall be shielded or guarded so that the product material being processed or waste stock will not endanger the safety of any worker.

All of these provisions are found within Ontario Regulation 692 which became the exclusive domain of the Branch with the passage of the 1978 Act.

In commenting on the pervasiveness of general performance criteria, Manga, Broyles, and Reschenthaler in their study for the Economic Council of Canada suggest:

When viewed from the perspective of traditional systems of evaluating and controlling the work environment, the terms "necessary," "likely to endanger," "reasonably," "as often as it is necessary," and "hazardous condition" are ambiguous and, as a result, the enforcement of the general performance criteria would depend on the discretionary judgement of the inspectorate. On the other hand, when viewed from the perspective of the internal control system, the legisla-

tive format of the general performance criteria provide a considerable latitude within which management and labour might cooperate in resolving health and safety problems present in the workplace.⁶⁸

Regulation 692 is broken down into three parts. Part I containing safety regulations, pertains to such matters as machine guarding, material handling, maintenance and repairs, and protective equipment. Contained in Part II is the specification that the Ontario Building Code applies to all industrial establishments. Part III is concerned with industrial hygiene and it is here that are found provisions for noise, temporary preventative measures for the seven designated substances and other toxic hazards, as well as requirements for ventilation of the workplace atmosphere.

Mining Health and Safety Branch

The Branch administers The Occupational Health and Safety Act and Ontario Regulation 660/79 (now Regulation 694; see R.R.O. 1980) in mines and mining plants. Again these regulations are based more on general performance criteria than on specific details or procedures. The Branch's work extends to over 200 mines, metallurgical plants, and clay, shale, and peat workings, plus approximately 5,000 sand and gravel pits. All of these operations employ approximately 66,000 workers.⁶⁹ Although the plants are usually those engaged in the primary processing of ore and are most often located at a mine site, Branch responsibility extends to the blast furnace operations of the major steel mills and to the transportation of metal-bearing materials in the immediate vicinity of these furnaces.⁷⁰

With the exception of uranium mining, the provincial government has jurisdiction over mining activities within provincial boundaries. It has been determined that all aspects of the nuclear cycle, including uranium mining, fall within federal jurisdiction by virtue of the peace, order and good government clause of the BNA Act.⁷¹ Except for the provisions of the Ontario legislation relating to joint committees and the right to refuse unsafe work, the federal legislation designed to cover uranium miners and plant workers is virtually identical to that which applies within provincial jurisdiction. This is so because the federal government referenced the Ontario occupational health and safety legislation as regulations under the Canada Labour Code. As noted earlier, the federal Code contains different provisions in respect of joint committees and the refusal to work. Accordingly, the regulations to the Code adopting the provincial statute are superseded by the language of the Code itself.

The Mining Health and Safety Branch's main offices are in Toronto and Sudbury. In addition, there are eight field offices, eight mine rescue stations and a wire rope testing laboratory located in Toronto. Staff are concentrated in the mining communities of Timmins, Kirkland Lake, Elliot Lake, and Sudbury. The major programs of the Branch are compliance, wire rope testing, mine rescue, and abandoned mines.

The Construction Health and Safety Branch

The Branch administers The Occupational Health and Safety Act in the construction sector and Ontario Regulation 659/79 (now Regulation 691; see R.R.O. 1980) which applies to construction work. The scope of its concern is the health and safety of approximately 230,000 construc-

tion workers in the province. They are engaged in all aspects of construction including erection, alteration, repair, demolition, dismantling and moving buildings and other structures, shafts, tunnels, highways, railways, sewers, watermains, and conductors of electrical energy, solids, liquids, and gases.⁷²

The regulations for which the Branch assumes responsibility are based on general performance criteria as well as on specific details and procedures, but again the former prevail.

As with the Industrial Health and Safety Branch there are four tiers to the organizational hierarchy. A Director reports to the Assistant Deputy Minister for the Occupational Health and Safety Division. Three Regional Office Administrators (equivalent to Area Administrators in the Industrial Branch) report to the Director. District Managers (equivalent to Regional Managers in the Industrial Branch) report to the Regional Manager. Inspectors, in turn, report to District Managers.

The Occupational Health Branch, the Special Studies and Services Branch, and the Standards and Programs Branch of the Occupational Health and Safety Division provide support and consultant services to the three line branches just discussed.

The Occupational Health Branch

The Branch supplies technical support services to the inspection activities of the Division and, through x-ray examination and pulmonary function tests, directly to industry. These services are rendered in the form of surveys and audits of industrial hygiene practices and facilities, measurement of the extent of contamination of workplaces by toxic

substances and provision of advice in these areas. The Branch works mainly with the Industrial Health and Safety Branch in the investigation of situations where health hazards exist or are suspected, and with the Mining Health and Safety Branch and the Construction Health and Safety Branch in a similar capacity when requested.

The Occupational Health Branch consists of four services: the Occupational Health Medical Service, the Occupational Health Hygiene Service, the Occupational Health Laboratory Service, and the Occupational Chest Diseases Service.

Special Studies and Services Branch

Much of this Branch's work is of a project nature, indicated by the purposes stated below:

- (a) to carry out short and long-term investigations of health problems associated with occupational exposure to hazardous agents;
- (b) to evaluate the health of particular groups of workers, such as uranium workers and workers exposed to silica or asbestos;
- (c) to conduct and/or sponsor research related to problems of occupational exposure to hazardous agents and evaluation of the health status of exposed workers.
- (d) to monitor the use of radioactive materials insofar as the province has jurisdiction.
- (e) to conduct studies and research in the area of occupational safety, and act as a consultant in matters relating to safe work procedures.⁷³

Standards and Programs Branch

The primary responsibilities of this Branch are two-fold. The first responsibility is to co-ordinate the development and evaluation of Occupational Health and Safety Division policies and programs on behalf of the Assistant Deputy Minister. The second is to assemble and analyze data on workplace hazards and to co-ordinate the development of programs to control the exposure of workers to hazards present in the workplace.

Resources and Personnel Data

In addition to understanding the roles of the branches, it is also useful to appreciate recent trends in MOL's expenditure and personnel data as well as some general attributes of the background and training of inspectors. Table 3.1 shows the pattern for MOL expenditures and employment in implementation and compliance activity between 1975-76 and 74 1979-80. The table is based on information supplied by the Ministry. It specifies expenditure and employment data on these activities for the Industrial Health and Safety Branch, the Construction Health and Safety Branch, the Mining Health and Safety Branch, and the Occupational Health Branch. The data must be interpreted cautiously. Expenditures on compliance and implementation as a proportion of total expenditures for the Occupational Health and Safety Division declined from 78.6 percent in 1977-78 to 73.5 percent in 1979-80, whereas the employment component for these activities increased from 68.8 percent of the total for the Division in 1977-78 to 72.2 percent in 1979-80.

TABLE 3.1

MINISTRY OF LABOUR EXPENDITURE AND EMPLOYMENT RESOURCES

FOR COMPLIANCE ACTIVITY IN THE FIELD OF HEALTH, SAFETY AND TOXIC SUBSTANCES

Year	EXPENDITURES(a) BY BRANCH				EXPENDITURES FOR	
	Industrial Health & Safety Branch	Construction Health & Safety Branch	Mining Health & Safety Branch	Occupational Health Branch	Occupational Health and Safety Division	
1975-76	\$ 2,595,550	\$2,715,315	\$	\$ 1,153,268		
1976-77	3,167,961	2,643,700		1,870,000 ^(b)		
1977-78	3,157,612	2,643,700	2,501,729	2,495,750	\$14,920,733 ^(c)	(999,116)
1978-79	3,276,622	3,211,188	3,080,775	3,330,332	19,767,876	(1,500,000)
1979-80	3,805,769	3,485,461	3,027,002	4,818,671	23,607,652	(3,000,000)
PERSON-YEARS: (d)						
Employment by Branch				Division		
1975-76	126	120			255	
1976-77	131	120			418	
1977-78	118	119	58	96	568	
1978-79	119	119	93	126	593	
1979-80	141	123	90	162	715	

(See notes on following page.)

Notes to Table 3.1

- (a) The branch data reflect all expenditures of the Branches noted.
- (b) Amount for full year estimated from expenditures made after Branch moved to Labour from Health in mid-December 1976.
- (c) Data includes payments for research, training, etc. from Provincial Lottery Trust Fund shown in brackets.
- (d) Actual person-years are not available but employment data are shown as proxy measurements.

The relative decline in expenditures could be attributed to the Ontario restraint program. At the same time, there is evidence in the detailed figures to show that MOL did increase its personnel resources in this field quite significantly. From 1977-78 to 1978-79 both the Mining Branch and the Occupational Health Branch had large increases in personnel as did the Industrial Branch the next year. The Construction Branch has stayed relatively stable. On the expenditure side, the lion's share of the new spending went to the Occupational Health Branch in recognition of the need for increased expertise and research to deal with the new "health" mandate as opposed to the older safety mandate emphasized under previous legislation.

Inspection and Compliance Personnel

There has been a gradual transformation in the profile of inspection personnel. Traditionally, inspectors came from a long career in industry after they had achieved the level of foreman/superintendent but were no longer upwardly mobile.⁷⁵ Increasingly, however, education plays a greater role in the selection of new inspectors. Part of this change is a consequence of the relatively new emphasis on health concerns. An uneasiness is apparent among older inspectors as they watch "young turks" with good educational credentials but little experience in the work world attempt to play mediator between labour and management. Yet they acknowledge at the same time that the current focus on health concerns demands the expertise that younger and more educated people can offer. Traditional safety concerns, in the view of these older inspectors, should not, however, be allowed to take a back seat to the more recent health

concerns since accidents continue to take their heavy toll in lives. Thus, most of them believe that it will always be necessary to have persons with a good cross-section of backgrounds.⁷⁶

In the Industrial Health and Safety Branch women are gradually being recruited, though primarily as inspectors for retail establishments.⁷⁷

In all branches turnover of inspection personnel is very low. Inspectors generally leave at retirement age, though this pattern may change with the younger profile of the inspectorate.⁷⁸

In spite of enlarged responsibilities for safety officers, salaries for inspectors have not risen commensurately. Looking at Table 3.2 it can be seen that between 1975-76 and 1979-80 salaries for Industrial Health and Safety officers increased only 23 percent, insufficient for sustaining 1975 living standards with inflation running rampant, let alone enough to compensate for the newly acquired manager-cum-mediator role of the inspector. Regional managers' salaries fared somewhat better, escalating 29 percent over the same period. Interestingly, however, it is important to note that despite these salary concerns, morale among field personnel has never been higher, at least according to the inspectors we interviewed. Most agree that the new approach is superior to the old system.⁷⁹

All inspection branches provide training programs for new inspectors. The Industrial Health and Safety Branch requires that new officers undergo a two-month training program consisting of in-house classroom discussion and field experience. This is augmented by Industrial Accident Prevention Association courses, Civil Service Commission courses, and workshops prepared by other branches. For example, the Occupational Health

TABLE 3.2
MINISTRY OF LABOUR SALARY DATA FOR INSPECTION PERSONNEL

Classification	1975-76	1976-77	1977-78	1978-79	1979-80
<u>Industrial Health and Safety Branch</u>					
Industrial Safety Officer	\$15,598-16,701	\$16,569-17,704	\$17,558-18,710	\$18,392-19,577	\$19,349-20,561
Regional Manager	18,091-19,782	19,538-21,365	21,075-24,075	21,900-25,025	23,475-27,175
Regional Administrator	20,778-22,919	22,440-24,735	22,375-26,475	23,250-27,525	24,578-29,100
Engineer (Specialist)	19,507-24,283	20,201-25,800	23,125-30,100	24,050-31,300	25,250-32,850
August 1, 1981 Actual Range \$23,183-39,000 and Average \$26,342 for categories listed.					
<u>Construction Health and Safety Branch</u>					
Construction Safety Officer	\$15,598-16,701	\$16,569-17,704	\$17,558-18,710	\$18,392-19,577	\$19,349-20,561
Regional Manager	18,091-19,782	19,538-21,365	21,075-24,075	21,900-25,025	23,475-27,175
Administrative Engineer	19,950-23,550	20,201-25,800	23,125-30,100	24,050-31,300	25,250-32,850
August 1, 1981 Actual Range \$23,183-39,000 and Average \$26,217 for categories listed.					

Table 3.2 (cont'd.)

Classification	1975-76	1976-77	1977-78	1978-79	1979-80
<u>Mining Health and Safety Branch</u>					
Mining Inspector ¹			\$17,558-18,710	\$18,392-19,577	\$19,349-20,561
Engineer (including supervisors)	\$21,068-26,225	\$22,879-28,481	23,125-32,825	24,050-34,125	25,250-35,825
August 1, 1981 Actual Range \$16,173-42,600 and Average \$29,767 for categories shown and technicians.					
<u>Occupational Health Branch</u>					
Physician	\$31,150-38,850	\$33,500-41,100	\$34,875-42,975	\$36,250-44,675	\$38,950-48,025
Nurse	16,662-19,075	18,168-20,850	19,349-22,198	20,605-23,488	22,460-25,602
Engineer/Hygienist	20,201-24,668	21,434-26,173	23,125-32,825	22,633-34,125	24,400-35,825
Environmental Technician	13,910-16,137	15,196-17,545	16,239-18,645	17,182-19,626	18,471-21,098
Laboratory Technician	13,746-15,942	15,023-17,339	16,072-18,436	14,656-19,411	15,757-20,862
Laboratory Scientist	17,894-21,614	19,156-25,865	20,310-27,321	22,138-29,780	24,241-32,609
August 1, 1981 Actual Range \$17,890-58,000 and Average \$28,436 for all categories listed.					

Excluding Medical
Professional - Range \$17,890-39,525 and Average \$25,541

1. Prior to 1977-78 all inspections were done by professional engineers.
2. The drop in the minimum of the range reflects the fact that hygienists with scientist classification (lower than engineers) started this year.

SOURCE: Ministry of Labour

Branch provides training in recognition of toxic agents in the workplace. Inspectors in the Construction Branch and Mining Branch receive similar training.⁸⁰

The Changing Role of the Inspector and Inter-Branch Relationships

It is one thing to described the separate roles of the MOL branches and to observe recent resource and personnel trends that have occurred in the wake of the passage of The Occupational Health and Safety Act. It is quite another to appreciate the relationships among the branches and to visualize how the new role of the front-line inspectors, both among the branches and as the "manager" of relations between MOL, the joint committees, and corporate management, functions. Before we examine the inspection process for the three front line branches in the next section, it is important to keep in mind both the difficulties involved and the degree to which MOL has not yet addressed these difficulties in the early years of the post-Ham reforms.

While the new inspectorate branches are now located under the MOL roof and thus some improved communication among them has occurred, there is still evidence of severe growing pains in trying to construct an integrated inspectorate. Part of the problem rests in the difficult task of getting persons with diverse technical and professional backgrounds to address the problems of the workplace as a whole, as opposed to their small professional chunk of it.⁸¹ We have not detected any elaborate effort in MOL to devise training or other programs to address this problem. No one suggests that it is easy but we are persuaded that a far greater effort is required.

A particular manifestation of such inter-branch relations is the question of how the front-line inspection branches deal with the Occupational Health Branch since the latter contains the real expertise in the broader health and toxic substances field. The hierarchical relationship is clearcut -- the Occupational Health Branch is called upon when needed, with need determined by the front-line Industry, Mining, and Construction Branches. In one context, this relationship makes sense, in that one does not want a parade of uncoordinated inspections occurring from the same agency. It does not necessarily make sense, however, when one takes into account the different kind of expertise required to detect, let alone deal with, the broader health and toxic hazards increasingly found in the workplace. The Occupational Health Branch is now brought in when needed but we believe, as will be more evident after the next section of this chapter, that it must be given a prime leading role of its own. It must be more "on top" rather than merely "on tap" since its primary expertise is different than that possessed by traditional inspectors. This need will be especially obvious when MOL has to deal with assessments and control programs for numerous rather than just a handful of designated substances. At the same time, it must work closely with the other branches as both educator and catalyst, to increase the probability that all branches can be more adept at understanding and recognizing the total spectrum of safety and health concerns.

These inter-branch relations cannot be divorced from the general manager role envisaged for the inspector under the Act. It is no criticism of current inspectors to say that they are not equipped to handle the broader role intended by the Act. The role is an heroic one in terms of

expectations. It will be no small feat under the best of circumstances for the new inspector to be both health and safety-wise, a negotiator and facilitator, as well as, on occasion, the tough cop. Neither previous background nor current training programs equip the vast majority of inspectors for this multi-faceted and important task. Some of these skills, moreover, can only be acquired through experience but education and training can help a great deal. Labour unions have been particularly critical of the inspectors' lack of background.⁸² We agree with this criticism to some extent, particularly as it concerns their knowledge of health issues. We question, however, whether any amount of training and experience can produce the "super" inspector envisaged by the legislation and the philosophy behind it.

It is evident that merely putting all the inspectorates under a "Labour" ministry does not in itself secure an improved inspection capability. The internal responsibility system and the Act are premised on some truly heroic assumptions about human behaviour and human relations. For even part of the objectives to be realized much more careful attention must be given to the problems raised above. These problems should be kept fully in mind as we proceed to our analysis of the inspection process.

The Inspection Process

In the discussion of compliance philosophy it was stressed that the internal responsibility system involves working towards ethical compliance. As linchpins for the implementation of the Ministry's enforcement philosophy inspectors are viewed by Head Office as managers who should be

allowed to manage with the least interference possible.⁸³ Accordingly, inspectors are left with considerable discretion in devising their own "cycles" for investigating plants.⁸⁴

The job of the district officer (inspector) is not to tell employers how to comply with the regulations; rather it is to report what regulations the employer is contravening. Although the Ministry can furnish specific details on how an employer can rectify a contravention, the employer is generally regarded as the expert. The employer has the scientific/engineering expertise to make the necessary modifications to the production process. However, among smaller operations, technical assistance is often requested by the employer. In such instances the inspector can rely upon engineering and technical expertise that exists in virtually every regional office.

There are several important nuances in the policy of each inspectorate with respect to the inspection process and the frequency and basis of workplace audits. This requires separate treatment of the practices of the respective inspectorates. The Industrial Health and Safety Branch will be dealt with in more detail than the Mining or Construction Health and Safety Branch, not because it is necessarily more germane to the issues dealt with in this study but because its mandate encompasses the majority of Ontario workers. In Chapter 4 we examine problems encountered by the Construction Health and Safety Branch regarding asbestos in schools.

It is also important to stress that the inspection processes described in the next few pages are based on a mixture of sources. It is based partly on MOL documents setting out how the process should operate. Evi-

dence of how closely the ideal conforms to reality was sought by interviewing several field inspectors as well as labour union personnel. To this base of information and perception we have tried to add our own critique of some of the logical contradictions of the system. This will be dealt with both here and in later parts of this chapter.

The Industrial Health and Safety Branch: Inspection Process

Inspectors make calls on industrial establishments for many reasons. In addition to the "internal responsibility system cyclical review" which comprises most of the inspectors' workload and will be the focus of most of our attention here, there are two other tasks that a district officer must perform which we will note briefly. These tasks are:

- (a) special calls on an establishment when there is a work refusal. In such a situation the inspector will investigate the refusal in the presence of the worker, an employer representative and a worker representative (union). The inspector will decide whether the machine, device or thing or the workplace or part thereof is likely to endanger the worker and issue a copy of his report containing the decision to the employee, the employer representative and the union.
- (b) investigation of facilities or accidents. The inspector's role in such an investigation is to collect as much information as is practicable that is relevant to determining the cause of the event, to determine if the duties and responsibilities as outlined in the Act and Regulations have been carried out, to determine what steps have been taken to prevent a recurrence and to report this information to his/her manager.⁸⁵

It is Ministry policy that these matters take precedence over cyclical reviews. More specifically the MOL priorities are stated as follows:

First priority - in order of descending importance:

- Investigations (i.e., accidents or fatalities)
- Refusals to Work and Union Complaints
- Follow-up Calls

Second priority - in order of descending importance:

- 3 and 6-month cyclical reviews
- Initial Reviews (the first time an industrial establishment is reviewed)
- 12, 18, 24 and 36-month cyclical reviews, with the longest cycle calls having the lowest priority.⁸⁶

Cyclical reviews, however, still constitute the majority of an inspector's workload. They are also the mechanism by which the inspectorate identifies, evaluates, and reviews the actions of companies on a regular basis in order to determine if the internal responsibility needs improvement and, if so, how it can be improved. "Cycles," or more simply the intervals of time between these regular workplace audits, vary from every three months to 99 months. A 99-month cycle is actually not a cycle at all. In such a case the inspector decides a company's accident prevention record is good enough to delay indefinitely further cyclical reviews.⁸⁷ While the discretion of the inspector in determining the frequency of inspections is considerable, the lapse in time between cyclical inspections is generally determined according to answers to the following unwritten questions:

- (a) Is there a history of injuries (documented by Workmen's Compensation Board claims)?
- (b) Have previous inspections provided evidence of potential hazards?

- (c) Do the establishments have a history of not complying with the law (i.e., inspectors' orders)?
- (d) Does an internal responsibility system exist and is it working effectively?⁸⁸

In addition, the inspector will use the Ministry's initial cycle table as a guide to the span of time in which an inspection should take place. At any time an inspector can recommend to his/her manager that the "cycle" for an industrial establishment be changed. If the superior disagrees, the inspector can still go ahead. Thus, one often finds industrial establishments falling within the same industrial category having significantly different cycles. The rationale for such discrepancies is that they tie the regularity of inspections to the maturity of the internal responsibility system in plants.

The cyclical review itself consists of three parts: self-assessment, evaluation of assessment, and the assessment review. All cyclical inspections are unannounced.

Self-assessment is the identification by the employer and employee representatives of the health and safety situation in the workplace. The inspector meets with the employer and employee representatives and records their assessment of the effectiveness of the internal responsibility system.⁸⁹ Upon entering the plant the inspector's first task is to:

- (a) determine if the employees are represented by a trade union;
- (b) request an interview with the following persons:

Union Shop:

- (i) an employee authorized by the trade union,
- (ii) a Health and Safety Committee Member, or
- (iii) the Health and Safety Representative, or

Non-Union Shop:

- (i) an employee authorized to represent the employees.⁹⁰

One of the principal elements of this assessment is the recording of unresolved concerns respecting health and safety matters. These are first listed in short-form by the inspector until it is established that there are no further unresolved concerns to list. Each concern is then addressed by itself and fuller, more detailed information is recorded so that the concern can be clearly understood by the regional manager and other Ministry officials. The specific details include the location and the precise nature of each concern. The following five questions are asked to obtain a full appreciation of each unresolved concern:

- (a) When was the concern first identified?
- (b) What action was taken by the worker or worker representative?
- (c) Who was the concern reported to and when?
- (d) What was the response of the supervisor or other employer's representative to whom the concern was made known?
- (e) Was this response satisfactory?

If the worker's representative is not satisfied with the action to date, the employer's representative is asked what further action he proposes to take to deal with the concern. The worker's representative is then asked if he is satisfied with the employer's proposals. This concern may still be in contravention even if "yes" is the answer. If there are no unresolved concerns on health and safety this is also recorded.

During self-assessment the inspector will usually ask how many times the health and safety committee has met and whether issues have arisen in the committee that have gone unresolved. If there is an apparent breakdown in the internal responsibility system the inspector will usually explain The Occupational Health and Safety Act, with reference to pertinent sections concerning responsibilities for health and safety, safety committees, and work refusals. The inspector may also give a brief explanation as to the meaning of the internal responsibility system and how it relates to the Act.

The evaluation stage is the physical inspection of the workplace. The inspector, accompanied by the employee and employer representative, identifies contraventions of the legislation. Where there is a contravention an order will be issued. Where there is not a contravention but there still appears to be a problem or need for improvement, a recommendation to this effect may be given. Orders include information regarding the location and nature of the contravention which led to the order being issued. Management can appeal any order. If any further unresolved concerns are brought to the attention of the inspector during the "evaluation walk-around" they are dealt with in the same way as in the self-assessment review.

After completing the evaluation of assessment, the assessment review stage is carried out. This is a review by the inspector with the employer and employee representatives of the differences between their assessment (as recorded in the self-assessment stage) and the contraventions found in the physical inspection. The inspector may ask to see the minutes of health and safety committee meetings to see how effectively the

internal responsibility system has been working. Any need for further development of the internal responsibility system is discussed as well as the mutual interest that both parties have in achieving ethical compliance. The Operations Manual instructs the inspector to discuss accidents and hazardous substances at this stage. The district officer has the right to demand any information regarding these matters from the chief engineer of the plant. The comments of the inspector are recorded and a full report of all three parts of the inspection are left with the employer who is required to ensure that a copy of this report is posted in a conspicuous place in the worksite.

There are three types of orders issued, "I" orders, "A" orders, and "R" orders:

"I" orders are issued for infractions not rectified while the inspector is on the premises. They require a follow-up inspection.

"A" orders, called "on-off orders," are those not requiring a follow-up inspection. They are used to identify an order issued and complied with during the course of the inspection. The order is still issued but the employer is given credit for rectifying the problem.

"R" orders are those that are re-issued. These occur when the order has been outstanding for 90 days.⁹¹

When an employer has not notified the Branch of completion of orders within 90 days of their issuance the Ministry's automatic data processing information unit in Toronto notifies the inspector of the need for a follow-up call to determine the status of outstanding "I" orders. Where the order has not been complied with, the district officer will re-issue the

order to the employer. If the Branch is not notified of compliance with the re-issued order within 90 days, the computer again notifies the inspector of the need for a further follow-up call. At what stage a prosecution should begin is not specified by statute or in the Ministry's Operations Manual. Since litigation is regarded as regulatory failure by the Ministry, every conceivable effort is made to achieve voluntary self-compliance with orders. Inspectors frequently request that their regional manager accompany them on their follow-up business. Where the inspector and regional manager believe that prosecution is necessary, the Area Administrator and Head Office will be consulted. Head Office will then determine if the litigation course ought to be pursued. As we will see below, litigation is infrequently used.

While every inspector obtains an inspection load every month from the computer, the district officer does not have to await such notice to do inspections. For instance, officers will usually conduct follow-up visits before receiving notice that it is required from Toronto Head Office.

Unlike the Ministry of the Environment there is in the MOL a systematic cyclical inspection of industrial establishments in Ontario. It is not, however, quite as systematic as MOL claims it is. For example, some MOL officials interviewed asserted that within a three-year time span there is 100 percent penetration of all industrial establishments in the province; that is, it is asserted that every worksite falling within the jurisdiction of the Industrial Health and Safety Branch experiences at least one cyclical review every three years. There is a contradiction between this view of the inspection cycle and the earlier description of the 99-month cycle.

Notwithstanding what has been said concerning the discretion of inspectors to determine "cycles" for firms within their district, the Ministry has instituted a priority-setting mechanism for calls on industrial establishments which place cyclical reviews at the lower rung of the priority ladder. The contrast with the Ministry of the Environment, where no such priority setting mechanism prevails, is significant.

The inspector also gets support from the automatic data processing (ADP) unit in Toronto for devising cyclical reviews. Each month the officer receives a computer print-out pinpointing, by standard industrial classification, workplaces that have had more than five accidents in the preceding year.⁹²

Pre-eminent among our observations of this inspectorate is the high morale pervasive throughout field and headquarters. There was no apparent dissatisfaction among inspectors or regional managers about the compliance philosophy of the Ministry nor about the practicality of attempting to implement such a philosophy in the field. There was no distinguishable sentiment that a rift exists between the "thinkers" at headquarters and the "doers" in field offices. Inspectors commented on their perception of increased respect over the past few years among trade unions and employers alike. Inspectors interviewed believed that health and safety concerns are being regarded to a much less significant extent as a negotiable item at least as evident to them in the inspection process.

Nevertheless, some regional managers did admit to viewing some employers, particularly in small- and medium-sized firms, in less sanguine terms than Head Office. Their view was that in the small- to medium-sized

enterprise the employer is more inclined to see himself as having built the business up from nothing. Accordingly such owners often look belligerently upon any outsider who tries to interfere. All inspectors and regional managers interviewed agreed that the internal responsibility system works most effectively in unionized worksites. Some also said that during negotiations of collective agreements things are a little more difficult and inspectors have to be wary of the temptation of both parties to attempt to capture the inspector. However, all agreed that the job of the inspector in the small unorganized establishment is made particularly difficult by the tenuous position of the employee. It is almost trite to point out that the internal responsibility system cannot operate effectively where a worker thinks or fears that he jeopardizes his job every time he lodges a complaint. Prohibition of reprisals notwithstanding, an employer can almost always find some excuse to dismiss an "obstreperous" employee.

An empirical examination of small versus large, and organized versus unorganized, industrial firms is rendered difficult by the manner in which the Ministry organizes its data on actions taken by the inspectorate. While the computer breaks data down into geographic and industrial classifications, there is no distinction between small and large, or organized and unorganized, firms. This study does not entitle us to state whether size of firm or degree of unionization is the more important variable. We think intuitively that both are important and are curious as to why MOL does not assess performance in relation to these two factors.

Mining Health and Safety Branch: Inspection Process⁹⁴

As already indicated the compliance program of the Branch consists of the following elements:

- inspection and enforcement;
- accident investigation;
- auditing the work environment;
- predevelopment review; and
- education.

Inspection and enforcement will be the focus of our concern here.

Inspections are carried out by inspectors and, to some extent, senior engineers. The objective is to cover each mine or mining plant at least three times a year. This does not mean having a complete inspection every four months, but rather, making frequent inspections with each one covering a small portion of the facility. Thus, in larger mines, an inspector may visit a mine site once or twice a week.⁹⁵ The Report of the Joint Federal-Provincial Inquiry into the Safety in Mines and Mining Plants in Ontario applauded this approach and said that it should continue because it permits the Branch to maintain "ongoing contact with each mine and mining plant within the province."⁹⁶

A typical inspection for a mining inspector is described in the following outline provided by Branch:

- (a) The inspector picks one of the several production areas, giving problem areas the top priority.
- (b) He arrives at the mine and tells the mine superintendent what area he wants to go to. He will be accompanied by the mine superintendent and a union Safety and Health Committee member. There is continuous discussion throughout the inspection with workmen, union and supervisor. During the inspection, the inspector records anything of

note. When the inspection is over, he discusses his report with the mine superintendent and, if serious, with the mine manager, and the worker committee representative.⁹⁷

The Branch attempts to secure compliance with the legislation through discussion during inspections and the issuance of orders to correct unsatisfactory conditions or practices. In issuing orders, the inspector specifies the time in which he expects compliance to be achieved. It is estimated by MOL that in 98 percent or more of the cases these time requirements are met.⁹⁸ However, when serious or repeated violations occur, or a violation results in a fatal or serious accident, the Branch seeks advice from the Ministry's legal staff on what course of action is appropriate and prosecution may result.

While the Branch relies heavily upon the issuance of work orders, under section 29(4) of the Act, if an inspector finds that a contravention "is a danger or hazard to the health or safety of a worker," he may issue an immediate stop work order. This may require the mine management to close down part or all of a mine or plant or to stop the use of certain equipment or machinery until the danger or hazard has been corrected. The Branch places substantial reliance on this provision of the Act as an enforcement measure and issued forty such orders during the twelve months ending September 30, 1980.⁹⁹

The 1981 Federal-Provincial Inquiry into Safety in Mines criticized the Mines Health and Safety Branch for devoting itself almost entirely to ensuring compliance with the technical and engineering requirements of the law. While the Industrial Branch seems seriously to attempt to monitor how well the internal responsibility system is working, the 1981 In-

quiry criticized the mining inspectorate for its perfunctory monitoring of the internal responsibility system and in particular the activity of workplace committees.¹⁰⁰

In our view, the joint health and safety committee provides a window through which to assess the quality of the relationship between company and worker, between union and worker, between company and union and between worker and supervisor.... We have discovered that review of committee proceedings minutes is given a low priority by the branch. Inspectors are not required to report on the workings of the joint health and safety committees within the operations they inspect.... There does not appear to be any planned program of branch observance of health and safety committee activity. Although the quality of the essential relationships cannot be quantified there are a number of behavioural or attitudinal indicia which may point to breakdowns. By failing to monitor the performance of the joint health and safety committees adequately, the branch is missing the opportunity to pinpoint potential substandard solutions before they are revealed by visual inspection of the workplace.¹⁰¹

Construction Health and Safety Branch: Inspection Process

The internal responsibility system is much more difficult to achieve in the construction industry because of the characteristics of the worksite. The labour-management safety committee, composed of the Provincial Building and Construction Trades Council of Ontario and the Construction Safety Association of Ontario, operates at the provincial level, but at the worksite several different unions are present. The problem is apparently most pronounced at demolition sites.¹⁰² Accordingly, in the view of Construction Branch officials interviewed it is not uncommon to find inspectors visiting a workplace every day.¹⁰³

Prosecutions are a more frequently employed enforcement instrument in the construction inspectorate than in the Industrial Health and Safety Branch where gentle persuasion and the soft push are the hallmarks of compliance philosophy. While voluntary compliance remains the ideal, there is apparently less reluctance to use more coercion in the Construction Branch than in the other branches of the Ministry. This can be partially attributed to the Branch's practice of mailing copies of "project inspection report" forms to the Ontario head offices of constructors. Along with the inspection report, which may or may not include an order, a copy of a letter signed by the Director of the Branch is sent giving notice of what constitutes a breach of the regulations and warning that prosecution may ensue from any order involving a serious contravention without further notification. Since inspections occur very frequently head offices are most often advised daily of what the regulations are and hence it is felt that there is no excuse for an employer not knowing what constitutes a violation of the law.¹⁰⁴

The practice of dealing bluntly with the offender is not necessarily inconsistent with the philosophy of promoting internal responsibility. Indeed, Dr. Ham claimed that coercive measures were consonant with the goal of the external administrative system, namely, keeping the internal responsibility system responsive:

The regulatory and auditing functions of the Occupational Health and Safety Authority should be designed to keep the internal responsibility system at the company level alert and responsive and to deal with the true offender.¹⁰⁵

Implementation and compliance practices of the Branch as they relate to the issue of asbestos in buildings will be discussed in detail in Chapter 4. However, it is worthwhile pointing out at this point that as a means of controlling asbestos at a construction or demolition project the usefulness of normal inspection practices is limited. It is generally accepted that the greatest danger of asbestos exposure for construction workers is when an older building is being renovated or pulled down and asbestos is exposed. For demolition projects the work can be finished before the initial inspection is made. This is further reason why prosecution may be more necessary in the construction field. For all construction projects the asbestos could be exposed on a day or even an hour of a day, other than that on which the inspection is made.

Information Collected

The Ministry of Labour is far more systematic than the Ministry of the Environment. It collects raw information from the field and processes it into serviceable data for use in field personnel performance appraisals, field support and in the evaluation of how successful the Ministry is in achieving its compliance goals. Included are data on:

- number of orders issued;
- number of orders re-issued;
- inspection cycles by establishment size;
- inspection data by standard industrial classification and standard geographic classification;
- accidents, inspection cycles, orders issued and re-issued according to industrial and geographic classifications;
- inspections of companies with workplace committees;
- data on prosecutions.

The raw data comes from a number of sources:

- (a) Each inspector sends a copy of his/her inspection report to Head Office.
- (b) Each inspector sends to Head Office a weekly report indicating: (i) what establishments he/she has visited; (ii) the cycle of plants visited; (iii) the municipality of the workplace, and (iv) the type of call (i.e., initial review, follow-up, re-inspection, new workplace, etc.)
- (c) Inspectors send monthly reports to Head Office, giving number of accidents, number of orders/re-orders, etc.
- (d) The Ministry issues a weekly and monthly report based on this aggregated data.

The Ministry computer is fed this information and processes it according to the classifications enumerated above.

From the processed data, Head Office gets some idea of whether or not the internal responsibility system is working, at least to the extent of knowing that if orders must be perpetually re-issued then something must be wrong. The data flow is used by managers for evaluating the performance of inspectors by showing the degree to which district officers follow-up on orders issued, whether they have good inspection "cycles," and whether inspectors make orders stick?¹⁰⁶

Assessing Compliance Processes and Outcomes

Both MOL officials and those who are the object of regulation -- businesses and labour -- are engaged in assessing how well the provisions of The Occupational Health and Safety Act are being put into effect. Such assessments may be formal or informal, systematic or anecdotal. Part of

the task of this study is to make judgements about the success or failure of the new health and safety regime. We have already seen some of the very real difficulties in making such judgements in the section above.

The first fact to be faced squarely is that each of the inspectorates deals with quite different physical situations in respect of its constituency and yet MOL must be assessed as a whole because the regulatory regime covers all these sectors. The Industrial Branch deals with a constituency of tens of thousands of firms of varying sizes, types of industry, and states of unionization. The Mining Branch deals with far fewer firms but with a wide range of physical/geological attributes, often located in remote areas of the province and in communities especially dependent on the mines. The Construction Branch must deal with the reality of numerous firms, projects and temporary worksites. The Occupational Health Branch deals with hazards whose effects may not be known for several years. One would therefore expect different problems in, and even criteria for, compliance activity in these sectors. This will be evident in the data analyzed below.

In addition to these physical realities, it is obvious that the criteria for evaluation are both "process" and "outcome" oriented. While we can point favourably as we did above to MOL's increased resources for the Occupational Health Branch and the enlarged inspectorate, these are at best only the most indirect indicators of movement in the right direction. The Occupational Health and Safety Act is also about "process" and thus involves judgements concerning how well the internal responsibility system is working in terms of human relations as opposed to reducing or

eliminating adverse health effects per se. There is also a need to assess provisions such as the pre-notification of new hazardous substances being introduced in the workplace. This raises problems of evaluation where the whole concept is preventative rather than curative and where one is attempting to measure non-events. This can be analagous to assessing police services. Is success based on catching criminals (a measurable phenomenon) or preventing crime (a non-event)?

To illustrate these problems of assessment it is useful to refer to a number of examples. The first is provided by referring to Table 3.3. In general terms these data show, since 1975-76, a declining number of inspections for the Industrial Branch; an increase and then levelling of inspections for the Construction Branch; a steady increase in inspections for the Mining Branch; and a sharp increase in the degree to which the Occupational Health Branch is called in to help inspect. Do these data denote success or failure? The answer is that it depends on one's criteria.

The decline in inspections for the Industrial Branch can reasonably be viewed in one sense as evidence that the internal responsibility system is working since one of the purposes of the latter is to increase "self-inspection" and the internal resolution of problems through the joint committees and other provisions of the Act. The stable increase in inspections for the Construction Branch could be viewed as evidence of the failure of the internal responsibility system except that one must remember that the system is inherently less operational in the context of temporary worksites and therefore increased inspections are logically necessary. The sharp increase in inspections for the Mining Branch may re-

TABLE 3.3MINISTRY OF LABOUR DATA ON NUMBER OF INSPECTIONS

<u>Year</u>	<u>Industrial Health & Safety Branch</u>	<u>Construction Health & Safety Branch</u>	<u>Mining Health & Safety Branch</u>	<u>Occupational Health Branch</u>
1975-76	57,571	56,853	--	1,126
1976-77	43,909	61,546	2,383	976
1977-78	42,582	66,663	3,497	1,684
1978-79	41,700	73,330	4,689	2,439
1979-80	40,421	65,650	7,009	4,416

Source: Ministry of Labour

flect the different weaknesses in the responsibility system outlined by the Burkett Inquiry and referred to earlier in this chapter. Here too, increased inspections may be an indicator of regulatory success or at least increased regulatory vigilance. The major increase in inspections for the Occupational Health Branch shows that it is being called in more frequently as would be expected and required by the new focus on health issues, but the data tell us nothing about whether adverse health effects are being reduced. The same of course applies to the data for the other branches.

To illustrate the evaluation problems further, Table 3.4 presents a proxy measure of inspections per worker at risk. It attempts to show the number of inspections of MOL's three front-line branches as a whole in relation to the number of Ontario workers at risk. Rather than use the total number of workers it was thought that a more meaningful measure (though still one fraught with analytical danger) would be workers at risk. Thus only workers in mining, manufacturing, and construction were used on the grounds that these are particularly high health and safety risk industries. The data show an increase in the inspections per worker at risk between 1976-77 and 1978-79 but a considerable decline in 1979-80. Once again, the net decline could be interpreted as evidence that the responsibility system is working.

Obviously no one could be satisfied with relying on such a single proxy measure. We present it not to play games with statistics but to show that there are genuine problems in evaluating the MOL as a whole or its branches separately, let alone the overall impact of The Occupational Health and Safety Act.

TABLE 3.4PROXY MEASURE OF COMPLIANCE:INSPECTIONS PER WORKER AT RISK IN ONTARIO

<u>Year</u>	<u>Total Inspections for Three MOL Inspection Branches¹</u>	<u>Number of Employees in Selected Higher Risk Industries²</u>	<u>Inspections per Worker at Risk³</u>
1976-77	197,838	1,067,600	.101
1977-78	112,732	1,073,800	.105
1978-79	119,719	1,079,300	.111
1979-80	113,080	1,109,200	.102

1. Total of Industrial, Construction, and Mining Branches as found in Table 3.3.

2. Total employees in Ontario in three high risk industries (mining, manufacturing, and construction). Data from Statistics Canada Catalogue 72-008, Monthly, April 1981. These figures are yearly averages based on seasonally-adjusted monthly figures.

3. Measure is a proxy since it does not in any way measure ultimate health effects.

Similar problems occur when one looks at Table 3.5 on convictions for the MOL branches. It shows a sharp decline in convictions for the Industrial and Construction Branches and a steep increase in one year for the Mining Branch. Given the far larger number of firms to be inspected by the Industrial Branch than the other branches, it is evident that prosecution is resorted to much less frequently by the Industrial Branch. One would expect a greater need to prosecute in the construction sector, not because it is more vigilant per se, but because temporary worksites require a compliance tool that is suited to securing a timely response during the lifetime of temporary construction or demolition projects. From one perspective, the Construction Branch's decline in convictions since 1976-77 may be troublesome, since everyone acknowledges that the internal responsibility system is inherently less operational in temporary worksites. One should, however, relate this decline in convictions to the increase in inspections in the construction sector reported earlier. It could be plausibly argued that convictions and prosecutions should decline if inspections are increasing since construction companies would be aware of the stepped-up inspections. The decline, however, may also be due to the economic decline in overall construction activity. In general, the conviction data must be interpreted carefully and is subject to interpretations pointing to success or failure depending upon the emphasis given and the criteria applied.¹⁰⁷

To present a final example with similar dilemmas, one can note data on the number of orders issued per inspection. For the Industrial Branch, while the total number of orders declined, the average number of

TABLE 3.5MINISTRY OF LABOUR DATA ON CONVICTIONS

<u>Year</u>	<u>Industrial Health & Safety Branch</u>	<u>Construction Health & Safety Branch</u>	<u>Mining Health & Safety Branch</u>
1976-77	102	618	
1977-78	67	536	8
1978-79	22	480	17
1979-80	50	367	6

Source: Ministry of Labour data, 1981.

orders issued per inspection rose from .77 to 1.0 in the period from 1975-76 to 1979-80. The construction ratio declined while the mining ratio has stayed the same in recent years.¹⁰⁸

If formal data presents problems, then informal perceptions are even more problematical, though not less important. In our separate study of institutional views we show that labour union spokesmen generally support the philosophy of the internal responsibility system but are critical of its operations.¹⁰⁹ Inspectors are, on the one hand, perceived to be no longer the tool of management but, on the other hand, are perceived as being ill-equipped to play the general manager role discussed earlier in this chapter. Unions are still very critical of the Industrial and Construction Branches but see a considerable improvement in the Mining Branch. Industry spokesmen generally perceive that the role of the inspector has changed. They tend to approve of the new system partly because it rejects the policeman role of the inspectorate.

The study by Luce and Swimmer, Worker Attitudes About Health and Safety in Three Asbestos Brake Manufacturing Plants, also shows interesting evidence at more micro level.¹¹⁰ Differences emerge among the workers' perceptions of how well the responsibility system (including the inspectorate) is working in the three firms studied. The different views seem to be held regardless of the knowledge of what inspectors do. Indeed, many workers do not know when it is an MOL inspector doing his rounds or the company's own safety officer. Workers in the firm with the best safety and health record nonetheless regard the whole responsibility system unfavourably because of a poorer general climate of labour-management relations. Workers in the firm with a poorer health and safety record but better over-

all labour-management relations regard the whole responsibility system more favourably. The importance of the Luce and Swimmer study is that it reports the perceptions of rank and file workers. It also shows the importance of the interconnected public and private behaviour needed to secure compliance, a point stressed repeatedly in our analysis as well.

In all of the above, it is necessary to stress that we have still not assessed compliance in terms of actual reduced health effect outcomes, whether measured in number of deaths, injuries, or exposure levels for particular substances. For example, the Burkett Inquiry was deemed necessary because of an increase in mining deaths. Despite this data, labour unions and others viewed the Mining Branch as having significantly improved its performance during the past three years. Part of the problem in these contradictory views undoubtedly arises from the mixed "process" versus "outcomes" criteria that one must apply. Part of it also rests on the particular problems of assessing health effects measured by exposure limits as opposed to deaths and injuries. The question of the adequacy of MOL's efforts to secure compliance with the provisions on health hazards and toxic substances deserves final comment, particularly because it is still by far the weakest link in the health and safety regulatory chain.

On the traditional safety side of the MOL mandate, data on deaths and accidents are kept but there has been justified criticism of the overall data base used. For example, the number of people killed at work was 105 in 1978, 111 in 1979, and 101 in 1980.¹¹¹ Since the theory of accident causation is so weak and so controversial it is difficult to attribute either the increase in deaths in 1979 or the decrease in 1980 to the new

regulatory regime. Things seem to have stayed much the same. The performance record is criticized by labour leaders as being caused by a combination of failure to enforce the present law, and to inadequacies in the health and safety committee process because employers do not co-operate with the committees.

The data base of accidents and deaths is acknowledged to be inadequate. The Advisory Council on Occupational Health and Occupational Safety has recently drawn attention to these inadequacies. It notes that the data on occupational safety are adequate for the limited purposes of identifying industries with high accident rates and for plotting injury and fatality trends. It stresses, however, that there is an "absence of data to explain how various types of accidents are caused."¹¹² The data on occupational health diseases is in greater state of disrepair, even when one takes into account the greater research problems in the occupational health field identified by the ACOHOS. These include the fact that the link between environmental agents in the workplace and the occurrence of occupational diseases has received intensive study only recently and that research efforts are impeded because "the overall incidence of occupational diseases in the workplace is low and because the effects being investigated are often subtle."¹¹³

The focus of the politics which led to the passage of The Occupational Health and Safety Act was on occupational health and on toxic substances but the response to the health issues does raise the possibility that traditional safety concerns will be ignored. This is a tradeoff which presents problems for both the MOL and its critics. In our analysis in this chapter we have already pointed out a number of features and trends

in MOL's effort to respond to the health side of its dual mandate. We have noted that increased resources have gone to the Occupational Health Branch and that the Branch is called in with increasing frequency. We have stressed, however, that the Occupational Health Branch is not a primary or front-line inspector and that on balance it should be. In our discussion of the Act and the designated substances process we took special note of the assessment and control process required for firms dealing with a designated substance and the general requirement in the statute to pre-notify MOL of new substances. In these spheres of activity there is little evidence that MOL is adequately prepared to deal with the growing health side of its mandate. Moreover, should it choose to divert more resources to this side of its mandate, it may well be that this would be done at the expense of its safety mandate.

It is essential to keep in mind that the Regulations for Industrial Establishments, made pursuant to The Occupational Health and Safety Act, provide that all measures necessary to prevent exposure to any toxic substance by inhalation or ingestion shall be taken and that where any toxic substance is used or produced, adequate ventilation must be provided. The Regulations for Construction Products also provide that where a worker is likely to be exposed to the hazards of injury from inhaling a noxious fume or dust, the worker shall be protected to mechanical ventilation or respiratory equipment. For mine workers, other than those working in an underground mine, a ventilation system is required that will prevent the exposure of a worker to agents in the atmosphere likely to endanger the health and safety of a worker.

The Ministry of Labour also requires inspectors to obtain basic data on the presence of any one of thirty-seven toxic/chemical substances in a workplace. Employers are required to post the report on the presence of toxics in a conspicuous place for workers to see. In addition, a copy is sent to the Ministry where it is used by the automatic data processing unit for the data base on toxic substances. While the Ministry is made aware of the establishments where there is exposure to toxic substances and chemicals, the information is of limited value because concentrations of the substances are not recorded in any systematic fashion. Nevertheless, the information from inspectors on hazardous materials has been used on occasion. For example, the Occupational Chest Diseases Section of the Occupational Health Branch was called in to do a survey on asbestos exposure. The survey covers all workplaces where inspection has revealed the presence of asbestos.

Where a toxic substance or chemical is discovered in the workplace the inspector can call upon an engineer or industrial hygienist from the Ministry to collect a sample and obtain a reading. A medical doctor from either Toronto or the regional office will be asked to evaluate the results and assess the risk associated with the presence of the substance in the workplace. With the advice of the doctor the inspector will determine if an order should be issued.

Employers are being encouraged to maintain a file on substances introduced, to or generated in, the workplace, as well as information on the frequency of use. Although this is a voluntary program, it is expected to improve the data base for the evaluation of health hazards.¹¹⁴

There are therefore some tentative signs that MOL is responding to the health side of its mandate but one does not find the response to be very systematic.

CONCLUDING OBSERVATIONS

The analysis in this chapter has hopefully made it clear that the regulatory regime required by The Occupational Health and Safety Act is complex and not easily assessed. Our analysis can only be considered to have partially covered the regulatory terrain involved. The legislation and the compliance philosophy behind it requires a complex blend of public and private behaviour. Our focus has been more on the MOL than on its partners in the private sector. Inevitably under such a regulatory regime there are contradictions and conflicts which must be balanced rather than permanently resolved. One is dealing with both different entrenched perceptions of reality as well as disputes over the new behaviour the legislation is inducing in practice. In this context we offer some general concluding observations about MOL and the occupational health and safety sector in both the standard-setting and implementation spheres of activity.

Several points regarding standard-setting and implementation in the occupational health and safety sector in Ontario should be stressed. First, the Ministry of Labour's overall approach has been better developed than that of the Ministry of the Environment. This applies both to its superior and more open standard-setting processes concerning designated substances and to its better articulated compliance philosophy. It

also applies to the more systematic concepts and practices that MOL applies to information collection and to the cycle of safety-related inspections. Recent improvements are undoubtedly a product of both the intensity of recent criticism and scrutiny as well as a desire by officials and ministers to reform the process and respond to criticism.

Standard-Setting

Relative to the MOE, the Ministry of Labour's approach is a progressive one but there can be little doubt that numerous regulatory weaknesses remain. The Ministry's standard-setting process shows all of the growing pains that inevitably follow the adoption of the new consultative approach. The informality and hence uncertainty of the process is both an asset and a liability. It avoids some of the pitfalls of the American approach but, at the same time, the rules of the standard-setting process are, to some participants, maddeningly uncertain and slow. It must be stressed, however, that MOL's consultative approach applies only to designated substances. There is no justification in principle why its numerous other regulatory processes and guideline-setting processes should remain outside the consultative approach.

A fully satisfactory standard-setting process is difficult to devise. We do conclude, however, that the Ministry will have to take more concrete measures to resolve more readily the repetitive technical and scientific debates that arise. We believe that the provisions of the OSHA Cancer Policy regarding rules for corroborative evidence on health effects provide a basis for reform which Ontario should adopt, particularly to speed the standard-setting process.

We believe it will also be increasingly necessary to include in these processes a requirement for formal written cost-benefit analysis. The case study of the new proposed asbestos regulations indicates that existing formal Cabinet requirements for economic impact assessments were not carried out in this instance. It is nonetheless true that the MOL is still implicitly engaged in an informal cost-benefit balancing exercise, a part of which was informed by business economics. We will explain more fully in Chapter 5 why we think formal cost-benefit provisions should be part of the standard-setting process and how this provision would affect labour's partly legitimate concerns about who bears the burden of proof.

A further weakness in MOL's approach is the absence of a formal permanent standard-setting committee within the Ministry to parallel that which exists in MOE. The Ministry of Labour must put its internal processes in order if it is to profit from the early experience with the designated substances process and if it is to deal with the imposing future standard-setting agenda it faces. The use of periodic task forces to prepare these standards will not be a sufficient basis for dealing with this agenda.

Implementation

As to ongoing implementation and compliance, we have stressed that it is necessary to differentiate the three inspectorates within the Ministry of Labour. We have stressed the need to keep carefully in mind what the data on inspections and convictions and other proxy indicators signify, given their different constitutencies and physical contexts. The industrial inspectorate seems to have made some progress in the post-Ham era

in its overall approach and inspection philosophy. The work of the construction inspectorate shows progress in the increased inspection activity, but leaves much to be desired, as we will see more clearly in Chapter 4. The work of the Burkett Inquiry suggests that compliance in the mining inspectorate still leaves considerable room for improvement despite the fact that labour views the Mining Branch's performance to be considerably improved. The Occupational Health Branch is being used more frequently but it clearly lacks a primary front-line inspection mandate.

The industrial inspectorate's implementation and compliance activities are still weak in several respects. First, the relative preference placed on ethical compliance, while undoubtedly desirable over the long-term, and perhaps even during the early years of the new legislation, is excessive. Resort to prosecutions has been viewed by the Ministry, to an unnecessary degree, to be an indicator of regulatory failure. Second, it is difficult to have confidence in the compliance activity given certain glaring gaps in the data the Ministry collects and makes public. For example, the Ministry does not break down or publish its compliance data to reflect variables such as unionized and non-unionized plants, and small, medium, and large plants. This is a serious omission in that these are variables which one would intuitively judge to be important factors in compliance activities. In addition, the Ministry does not make public data on the number of re-orders it has to issue. The public therefore has no basis on which to judge the potential prosecution situations that might arise.

The Ministry of Labour is certainly aware of the need to improve its capacity to deal with toxic substances. It has begun to collect data on such substances and to develop priority lists but there is little sense of direction as to how the data would be used and how it will impact on the ongoing inspection process in all of the MOL inspectorates.

Increased financial and personnel resources have been made available to the Ministry in the wake of the new legislation, and there is increased recognition of the need for new personnel with expertise in dealing with toxic substances. The Ministry will, however, have to significantly increase its expertise in the toxic substances field and pay far greater attention to the problem of training and educating its traditional and new personnel in a way which reinforces both their roles. Inspectors are not now equipped to play the managerial role envisaged for them, nor can they fully resolve the conflicts inherent in being both facilitators and tough cops.

These observations about the Ministry of Labour indicate both progress and the existence of several major inadequacies. A further appreciation of the Ministry's role will emerge after our analysis of the building sector in Chapter 4.

NOTES TO CHAPTER 3

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22. See Advisory Council on Occupational Health and Occupational Safety, Annual Report 1978, 1979, and 1980. (Toronto: Queen's Printer).
23. See Pran Manga, Robert Broyles, and Gill Reschenthaler, Occupational Health and Safety: Issues and Alternatives, Regulation Reference, Technical Report No. 6 (Ottawa: Economic Council of Canada, March 1981).

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25. Quoted in Ibid, p. 148.
26. Economic Council of Canada, Reforming Regulation (Ottawa: Supply and Services, 1981), p. 103.
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29. See Gene Swimmer, "Labour Canada: A Department 'of' Labour or 'for' Labour," in How Ottawa Spends Your Tax Dollars, ed. G. Bruce Doern (Toronto: Lorimer, 1981), pp. 148-183.
30. These points are derived primarily from interviews with officials at both headquarters and field levels. See also Swimmer, op. cit. note 29.
31. See Canadian Centre for Occupational Health and Safety, President's Third Report to the Council of Governors (Hamilton: Canadian Centre for Occupational Health and Safety, 1980).
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53. Ibid., p. 6.
54. Interviews.
55. Jim McNair, op. cit. note 50, at p. 6.
56. Ibid., p. 10.
57. Ibid., p. 8.
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65. Ontario Ministry of Labour, Operations Manual, op. cit. note 62, at
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72. Ontario Ministry of Labour, Written submission to the Royal Commission on Asbestos, op. cit. note 8, at p. 31.
73. Ontario Ministry of Labour, Annual Report 1979-1980.
74. In supplying this data the Ministry was asked to define implementation and compliance activity to include research and analysis, monitoring, education, and information activities, as well as inspections and related enforcement activities.
75. Interviews.
76. Interviews.
77. Interviews.
78. Interviews.
79. Interviews.
80. Interviews.
81. See Robert Sass, op. cit. note 17. Sass gave this problem particular attention in Saskatchewan where he headed the Saskatchewan Occupational Health Branch during its effort to integrate its diverse inspectorates.
82. See Prince and Doern, op. cit. note 45, at Chapter 3.
83. Interviews.
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85. Ontario Ministry of Labour, Operations Manual, op. cit. note 62, at Section 6 (updated March 1980).

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87. Interviews.
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91. Interviews.
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94. We rely primarily upon the Annual Reports of the Ministry, the Ministry's report to the Joint Federal-Provincial Inquiry Commission into Safety in Mines and Mining Plants in Ontario and the Report of that Inquiry for all of our information on the inspection process for this Branch.
95. Ontario Ministry of Labour, Brief to the Joint Federal-Provincial Inquiry Commission into Safety in Mines and Mining Plants in Ontario, #8.1, November 1980, p. 30.
96. Joint Federal-Provincial Inquiry Commission, Towards Safe Production., op. cit. note 2, at p. 112.
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102. Interviews.
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C H A P T E R 4

BUILDINGS: THE ONTARIO ASBESTOS IN SCHOOLS CASE

In the world of standard-setting and implementation for health and safety, the buildings sector -- or what some call the "internal" environment - seems to be a jurisdictional no-man's land. Buildings fall in a category between the larger outdoor environment and the workplace. They encompass schools, universities, hospitals, theatres and museums, subways and numerous private business offices and apartment buildings. These are places both where people are employed but also where other people visit or utilize the building, sometimes present in it for long periods of time (e.g., school children) or only for a day or less (e.g., a visit to a museum). The building sector can also encompass temporary building or removal sites such as when Ontario schools had asbestos removed from them or encapsulated in them. In the latter situation problems of enforcement can be quite different from those experienced in permanent workplaces and in the outdoor environment. The removal of hazards to protect the general public can easily lead to increased risks for workers engaged in the removal or repair activity. Thus environmental and occupational hazards become closely entangled.

We will not examine the entire building sector because there is insufficient information to do this properly. We will discuss the building sector by focusing on the issue of asbestos in Ontario schools.¹ We will not deal here with the origins of the schools case since this is

fully explored in the separate study on hazard identification.² The reader should review the origins of the schools case, however, since it will help place the analysis in the present study in context. A particularly important feature of the origins of the asbestos in schools issue is the temporary environmental and occupational health political coalition which was forged around it. It was a combination of concern about children plus the "timely" death (in political, but certainly not human terms) of a school worker from asbestos exposure which led to media, parental, and labour union pressure. This political pressure resulted in the establishment of the Royal Commission on Asbestos and in the Ministry of Education's funding of a multi-million dollar removal and encapsulation program. Labour unions had been bitterly critical for years of the failure of regulators to act on the mounting evidence of worker deaths due to prolonged asbestos exposure. Thus the relatively swift, indeed perhaps precipitous, governmental response in the case of children in schools made the previous inaction on worker demands all the more difficult to tolerate.

This chapter will show that there are reasonable grounds to conclude that the swift regulatory action for children has been taken by increasing still further the risk to workers engaged in the removal and repair activity. The implementation of the schools asbestos removal and/or encapsulation program contains other important lessons, particularly if in the near future similar programs are launched for other parts of the building sector. Indeed, there are already developments in other sectors including hospitals. We will refer to these briefly in the last part of this chapter. In Chapter 5 we will suggest ways to resolve the issue of jurisdiction over the building sector in matters of health and safety.

To understand the schools case we will first describe briefly the role of the institutions and agencies involved. We then examine the role of standard-setting in the case. Because there has been confusion as to which standards, occupational or environmental, should apply in schools, the role of standard-setting per se is limited. We therefore focus the bulk of our analysis on the implementation and enforcement of the program to remove and/or encapsulate asbestos in Ontario's primary and secondary schools.

ROLES AND RESPONSIBILITIES: AN INSTITUTIONAL PROFILE

The schools case is a fairly complex one. It is necessary to have a preliminary profile of the roles and responsibilities of the major institutions. This profile is presented in summary form below. More will be said about these institutions in the detailed analysis of implementation and enforcement.

Ministry of Education

The Ministry of Education (M.O.Ed.) asserted primary jurisdiction over the health and safety aspects of the schools program under The Education Act which confers general powers to ensure the safety of children in their school surroundings.³ The Ministry provided special funding to the school boards using normal grant formulas to carry out the removal or encapsulation program. It also requested the initial survey of schools to determine the degree of asbestos problem, if any, in each school. It has been involved in advising school boards on suitable contractors, and sent out technical material (derived mainly from U.S. EPA guidelines) on how to decide whether to remove or encapsulate and on how to do it safely.⁴

Ministry of Labour

The Ministry of Labour (MOL) has jurisdiction in schools arising out of The Occupational Health and Safety Act because of the presence of workers such as teachers and custodial and support staff.⁵ On removal and encapsulation programs it has jurisdiction over construction safety. The Construction Health and Safety Branch of the Ministry is charged with inspecting the asbestos program in the schools. Health experts in the Occupational Health Branch have also been involved when asked by the Construction Branch, by individual school boards, or by the Ministry of Education.

Ministry of the Environment

The Ministry of the Environment (MOE) has jurisdiction under The Environmental Protection Act over waste disposal sites, which the MOE licenses. Some of these sites are municipally owned while others are privately owned. How the asbestos removed from schools is transported, stored, and dumped is an important issue and will be even more important if removal programs are extended to other public and private buildings. Also at issue in the case is whether MOE's air quality guidelines for asbestos (0.04 fibres longer than 5 microns per cubic centimetre of air measured over 24 hours) applies in the internal environment.

Ministry of Consumer and Commercial Relations

The Ministry of Consumer and Commercial Relations is not an active participant in the schools program. It is mentioned, however, because

building codes are part of the Ministry's mandate. Because of this jurisdictional claim on the building sector, it is important to relate this Ministry's role in health and safety regulation. For example, the schools controversy led to the establishment of a permanent committee to investigate and regulate the use of hazardous building materials. This committee is to report its recommendations to the Deputy Ministers' Committee on Occupational and Environmental Health described in Chapter 1. The Deputy Ministers' Committee in turn recommends a course of action to the Ministry of Consumer and Commercial Relations under The Building Code Act. The task of sorting out the jurisdictional issues is left to Chapter 5 when we examine the overall machinery for enhancing health and safety co-ordination in the Government of Ontario.

Office of the Ontario Fire Marshal

The Fire Marshal has jurisdiction in approving the use of fire retardant materials in building construction. Since this is the chief use of asbestos, the Fire Marshal must approve the substitutes if asbestos is removed, and the encapsulation materials and sealants if the decision is to encapsulate the asbestos. Several products have been approved primarily based on laboratory tests in the United States.⁶

School Boards and Parents

School boards are locally elected and have general responsibility to set local school board policy within the confines of The Education Act. They also effectively set local tax rates to finance school operations. School boards have been actively involved in the asbestos case both as decision-makers and as a forum for parental concern about the safety of their children from asbestos hazards.

Unions

Several unions are involved in the schools question. These include unions representing custodial and support staff, teachers, librarians, and construction and other workers, especially those involved in the removal or encapsulation of asbestos. As the case study on the origins of the Ontario asbestos in schools has shown, unions were the prime initiators in raising the asbestos issue not only as it affects public buildings but as it affects the workplace as well.⁷

Asbestos Removal/Encapsulation Industry

Pressure and/or requirements to remove or encapsulate asbestos in schools and other public buildings creates new or enlarged economic opportunities for firms and individuals involved in this activity. The size and composition of this industry is difficult to describe accurately. Between 1980 and 1982, well over twenty million dollars in removal or encapsulation work has been at stake. The companies involved include those engaged in construction, demolition, insulation, and acoustics activities. One measure of the industry can be found in the fact that over fifty firms have sent personnel to take the special course on asbestos offered by the Ontario Research Foundation.⁸ On the other hand, government officials and other persons interviewed in the Metropolitan Toronto area agreed that there were only about six to ten firms which were experienced, capable, and qualified to do the work, especially removal work.

The Asbestos Substitutes Industry

If a fireproofing material containing asbestos is removed it must be replaced by some other substance or product with suitable fire protection properties. The asbestos substitutes industry therefore has a considerable stake in the business. Indeed concern has been raised that some firms holding exclusive licences to sell and apply these substitutes are attempting to corner the removal activity market as well, or at least are making it difficult for those engaged in removal to also provide the additional services of applying the substitute material.⁹

The Ontario Fire Marshal's Office has approved several products as replacement fire protection for asbestos on structural steel members. These are: fire-rated gypsum wallboard; plaster; several materials listed by the Underwriters' Laboratories of Canada, Underwriters' Laboratories, Inc., and the National Research Council. These products are manufactured by Cafco Products Ltd. (Mississauga), Cem-Al Products Ltd. (Markham), Spraycraft Corp. (Brooklyn, U.S.A.), Spraydon Corp. (Fort Lauderdale) and Jet-Insulation Spray Insulations by Air-O-Therm Co. Ltd. (Elk Grove Village, Illinois); and various cementitious mixtures.¹⁰ The Fire Marshal's Office is careful to note that its approval is based on fire protection properties only.¹¹ No other health and safety attributes of these products have been tested by them (or by other agencies of the Ontario government).

Architects, Engineers, and Professional Consultants

The building sector involves numerous professions in strategic roles. Architects and engineers both in private practice and as employees of school boards are involved in the design, construction, alteration and demolition of buildings. The asbestos removal program has also required many school boards to hire special consultants, familiar with asbestos, to oversee the removal and encapsulation work carried out by contractors. The latter are a particularly scarce commodity with perhaps only five or six available in Ontario. They are being kept exceedingly busy by the Ontario schools asbestos program.

The asbestos question raises potentially difficult dilemmas for the architectural and engineering professions. For example, the question arises whether architectural and engineering firms should immediately advise all their past clients in the public and private building sector about the precise quantity and location of asbestos materials used in these buildings.

The Media

The mass media's role in identifying hazards, including the asbestos hazard in Ontario schools, has been examined in detail in a separate study.¹² Its role is obviously an important one at the identification stage. The media's role in subsequent implementation and enforcement is a very limited one. The media tends to lose interest when the day-to-day problems of implementation have to be faced. The world of implementation and compliance is generally not viewed as "news."¹³ The Ontario schools case amply demonstrates this fact.

Ontario Research Foundation (ORF)

The ORF is an independent research foundation created by the Ontario government to carry out research and technical services for public and private sector clients on a fee basis. As we have seen, it is also involved in offering courses on asbestos. It is also one of the few independent centres of expertise on asbestos in North America. This arose partly out of contractual work it had carried out with the U.S. Environmental Protection Agency (EPA).¹⁴

The case study on the origins of the asbestos in Ontario schools question has shown the degree to which EPA was relied upon for guidance both by the Ministry of Education and by the Occupational Health Branch of the Ministry of Labour.¹⁵

STANDARD-SETTING AND THE APPLICATION OF STANDARDS IN SCHOOLS

Workers in schools other than teachers come under the direct jurisdiction of the Ministry of Labour under The Occupational Health and Safety Act. The present Ontario "control limit" of two fibres per cubic centimetre therefore applies. Inspection and air sampling "in a few of the schools with the greatest concentrations indicate levels of one-tenth to one-twentieth of this occupational exposure limit."¹⁶ The Ministry of Labour's official view is that fibre levels to which workers are exposed in school facilities is "considerably less serious than in situations where the material is mined, manufactured, or used or removed in construction."¹⁷ Therefore no new standard-setting processes have begun in respect of asbestos in schools or other public buildings. However, air samples are required to be taken after removal/encapsulation activity is completed to ensure that the agreed limits are met.

A central question in the schools case is what standards are to apply in the "internal" environment in which both children and workers are located. We have already shown in Chapter 2 that the MOE criteria and guideline for asbestos (0.04 fibres) is meant to apply to the outside environment. The environmental criterion was extrapolated in 1970 from the U.K. occupational standard and is about ten times more stringent than the occupational standard in place in the U.K. at that time. In our separate study of origins of the schools issue (contained in The Politics of Risk: The Identification of Toxic and Other Hazardous Substances in Canada) we stressed that there was little thought given to the possibility that the outdoor environmental guideline might apply in schools. There is also controversy over whether one can accurately measure airborne asbestos fibres within buildings to satisfy such a guideline. The problems arise because of the numerous types of construction and the condition of materials within any building or section of a building. It is still, therefore, an unresolved issue as to which guideline or standard a post-removal or post-encapsulation air sampling exercise is to satisfy.

The further important question is the utility of using standards at all during the processes of construction, removal, and alteration of buildings. Both the construction industry and the unions agree that the temporary and dynamic physical nature of non fixed-place worksites usually render traditional regulatory control measures impractical. Air monitoring to determine concentrations of airborne fibres may be practical for fixed industries where the work procedures are more constant, ventilation is either constant or controllable, and the process under investigation is constant. However, as the Construction Safety Association of

Ontario pointed out in its written submission to the Royal Commission on Asbestos, "the dynamic nature of typical construction projects is not conducive to obtaining realistic measurements of exposures by air sampling. Also the time required to collect and analyze the air samples may exceed the duration of exposure."¹⁸ The brief pointed out major difficulties with other devices such as medical monitoring of workers in a high turnover workforce, the rotation of workers (impractical due to the small workforce most contractors employ), and engineering controls.

The unions' submissions concur that construction worksites require special regulatory treatment for which normal standard-setting is inappropriate.¹⁹ The Construction Safety Association of Ontario prefers what it calls "regulation by procedure" as the best regulatory concept for such worksites. We will examine this concept further in a later part of this chapter.

Standard-setting per se does not appear at first glance to be a separate, distinct activity as it applies to schools in the removal of asbestos. But standards can affect the schools sector in that, if a decision to encapsulate the asbestos found in a school is made, it should result in an acceptably low level of exposure afterwards.

It can be stated, however, that no standard-setting process has been tried in Ontario which specifically addresses whether exposures in buildings to non-workers (e.g., children) should be different than standards set for the workplace or for the broader outdoor environment. Because of this we will focus our examination on the actual implementation and enforcement process experienced in the asbestos in Ontario schools program.

IMPLEMENTATION AND ENFORCEMENT

The analysis of the origins of the asbestos in Ontario schools case shows that the response of the Ontario government was swift when it came to providing funds to assist schools in the protection of children's health. The response also reflected a general state of unpreparedness when it came to providing technical advice and ensuring that a proper inspection program was in place to protect the health of workers. The implementation and enforcement process will be described and critically examined according to the sequence of steps required. We are particularly interested in the problems to avoid, especially if removal and encapsulation programs are applied in the future to other public buildings and with respect to hazards other than asbestos.

Notification and Advice to School Boards

On June 25, 1979, the Ministry of Education requested through its regional directors of education that the boards of education complete a preliminary identification of the presence of asbestos in their facilities. The initial memorandum contained no guidance as to what to look for or how to remedy the situation.²⁰ It is clear that at this early stage many school boards lacked the knowledge about how to proceed. Eventually, but at the cost of much confusion, uncertainty, and political criticism, a ninety percent response to this request was received. According to a Ministry of Labour document, asbestos was present in 732 schools, about fifty percent of this in a friable and exposed form, mainly in ceilings and plenums.²¹ A July 1981 summary prepared by the Grants Policy Branch of the Ministry of Education shows only 426 with exposed asbestos (see Table 4.1).

TABLE 4.1

ONTARIO MINISTRY OF EDUCATION ASBESTOS SURVEY

UPDATED TO: July 29, 1981

REGIONS AND PROV. SCHOOLS	NO. & % OF BOARDS AND PROVINCIAL SCHOOLS:		NO. OF SCHOOLS REPORTED:			USED IN PLENUM	OTHERS	NOT VERIFIED
	RESPONDED	DID NOT RESPOND	NO ASBESTOS	EXPOSED				
Central	47 98%	--	1970	287		14	307	78
Eastern	18 100%	--	585	31		1	23	--
Midnorthern	26 100%	--	264	22		--	3	--
Northeastern	28 100%	--	207	4		--	27	--
Northwestern	35 100%	--	172	20		--	9	--
Western	21 100%	--	571	58		3	48	--
Prov. Schools	23 100%	--	16	3		--	4	--
Total	198 100%	--	3585(80.1%)	425(9.0%)		18(0.4%)	421(8.9%)	78(1.6%)
Total Schools in Province: 4727			Total Schools Reported: 4649			Total Schools Not Verified: 78		
Colleges	22 100%	--	8(36.3%)	8(36.3%)		--	6(27.4%)	
Universities	221 100%		14(66%)	7(34%)		--	--	
TOTAL	241 100%		3807(79.8%)	440(9.2%)		18(0.4%)	427(9.0%)	78(1.6%)

Source: Grants Policy Branch, Ministry of Education.

Following the request for the initial surveys an Interministerial Committee on Asbestos was created by the Ministry of Labour. The Committee was composed of representatives from the Ministries of Labour, Environment, Consumer and Commercial Relations, Health, and Education. The Committee met as required on the asbestos issue and under its auspices a manual entitled "Inspection of Buildings for Asbestos" was prepared. The manual was sent out to school boards, colleges, and universities on January 25, 1980. A second survey based on bulk samples was initiated at the same time. Samples of suspect material were to be sent to the Ministry of Labour's laboratories. If tests proved the existence of asbestos hazards the boards were to carry out assessments to determine what corrective action should be taken.

It is interesting to note that later, on March 19, 1981, the Interministerial Committee's mandate was broadened beyond asbestos. Henceforth it was to be a new vehicle for investigating and regulating the use of building materials "the use of which creates an apparent health hazard to occupants or users of a building."²² The function of the Interministerial Committee on Building Materials is to review the need for research into potential hazards in buildings and to recommend appropriate recommendations under The Building Code Act. As noted earlier the Committee reports to the Deputy Ministers' Committee on Occupational and Environmental Health for review and consideration which in turn advises the Minister of Consumer and Commercial Relations on the course of action to be taken in respect of the material.

In addition to requiring the above-noted surveys, the Ministry of Education made extra financial assistance available on the sliding scale basis of its capital grants program. In fiscal year 1980-81, these grants

totalled 8.34 million dollars. A further 12.1 million dollars is allocated for the 1981-82 fiscal year and 8 million dollars for the 1982-83 fiscal year.²³

Deciding on Control Options: Enclosure, Encapsulation, and Removal

To control the asbestos hazard, school boards were left with three options: to remove it, to encapsulate with a sealant, or to enclose it with a barrier which separates the material from the building environment. The Ministry of Education's general advice to school boards on these choices is summarized in Table 4.2. The Ministry noted that a key determinant in the choice is the degree of friability of asbestos materials, but there is no instrument to determine friability. It is therefore hoped that experience would be gained in the initial stages of the asbestos control program so that more uniform practices could be adopted later.²⁴

That significant differences of view over this critical choice exist is evident in several ways. Submissions made to the Royal Commission on Asbestos indicate that "encapsulation or enclosure are preferred by the Ministry (of Education) where they will provide protection."²⁵ Thus encapsulation would be suitable where the asbestos is bound into materials such as plaster, tiles, wall panels, well-adhered fireproofing, or when it is in locations entry to which is infrequent. Removal would be the solution where asbestos "is likely to be released from insulation that is subject to vibration, is located in or near ventilation facilities...or is too friable to control...."²⁶ In contrast to this at least implied preference for encapsulation, the Metropolitan Toronto Board of Education Advisory Task Force on Asbestos in Schools strongly favoured removal. The Task Force report concluded as follows:

TABLE 4.2

Asbestos Hazards in Schools

The Basis on Which Advice is Given With Respect to Whether
Asbestos Should be Encapsulated, Removed, or Enclosed

The three known methods of eliminating asbestos hazards in schools are encapsulation, enclosure, and removal, as briefly described below. The description includes their appropriateness of application upon which the advice of Architectural Services to school boards is based:

1. Encapsulation: To encapsulate asbestos materials by spraying sealant over their exposed surfaces.

Application: For such asbestos products as fire stage curtains, asbestos ceiling tiles and wall panels.

For sprayed but well-adhered asbestos fireproofing materials and acoustic or decorative plaster where the added weight of encapsulant will not cause the asbestos materials to fall off from the surface to which they are originally applied.

For asbestos cementitious plaster ceilings.
2. Enclosure: To confine asbestos materials by constructing an enclosure.

Application: For confining asbestos materials in existing ceiling spaces by constructing a new ceiling provided that there are no building components or equipment in the ceiling space which require access for periodic repairs and maintenance and that water leaks into the ceiling space from above are not expected.

For confining and protecting asbestos materials in areas subject to physical damage or vandalism such as low-lying ceilings, bulkheads, and/or beams in gymnasiums and stairways.

....2/

Table 4.2 (continued)

3. <u>Removal:</u>	To physically remove asbestos materials. (Removal often requires replacement with non-asbestos materials.)
Application:	<p>For eliminating asbestos release from spray-on fireproofing of long span steel structures when they flex or vibrate.</p> <p>For eliminating asbestos fibres in air plenums where their release from sprayed fireproofing or from asbestos ceiling tiles can contaminate the whole building through the ventilation system, particularly in the case of sprayed fireproofing which is friable.</p> <p>For preventing the crumbling of sprayed asbestos materials which are too friable to be encapsulated or which has a condition unsuitable for enclosure.</p>

Source: Ontario Ministry of Labour, Supplementary written submission to the Royal Commission on Asbestos, #61, March 1981, Appendix IV.

Much has been said of encapsulation; the direct spraying of friable asbestos material with either a penetrating chemical or bridging liquid to seal in asbestos fibres. The adhesive quality of a sprayed asbestos material was designed to support its own weight. The encapsulation process adds to the original weight and naturally puts an added strain on the adhesive quality. Therefore, failure is possible, either at the time of application or later. None of the materials being proposed for encapsulation was originally designed for spraying over asbestos. As a result, their capabilities vary widely. The most significant variable, however, is the standard of the original installation and its present condition.

These unknown factors, set against the cost involved, make encapsulation a very doubtful procedure. Hence, it should be used only in specific areas difficult or impossible to treat in any other way.

However, if encapsulation is considered, the sprayed asbestos must be in good condition and the encapsulation sealant material must receive the approval of the Ontario Fire Marshal. It should also meet the testing requirements of the EPA until such time as Canadian standards have been developed.²⁷

These conflicting preferences were reflected in the decisions of school boards and the timing of the control work. The Toronto School Board used the Metro Task Force philosophy and favoured removal. It was cautious and measured in deciding what action to take. For example, in fiscal year 1980-81, only about .5 million dollars was spent on six removal contracts. In 1981-82, about ten contracts have been let, totalling approximately 2 million dollars. A total of about 17 million dollars was the initial projected cost for the Toronto Board's program.²⁸ Other Metro Toronto area boards such as the Scarborough Board of Education followed a similar pattern in preferring removal.²⁹

In direct contrast, the Ottawa Board of Education chose encapsulation. Of the Ottawa Board's 83 schools, 31 required some kind of asbestos control action. About 95 percent of the asbestos was in acoustic material and encapsulation was used. Removal of asbestos in only one auditorium was deemed necessary. All of the control program was completed in the summer of 1980 at a total cost of about 400,000 dollars. The Ottawa Board's preference was based not only on the lower cost of encapsulation but also on the belief of its technical advisors that removal programs were too dangerous both for workers and students.³⁰

Encapsulation was the preferred option in most of the school boards outside of the Metro Toronto area. A list of approved projects supplied by the Ministry of Labour and dated February 23, 1981 indicated the following breakdown: encapsulation (145); removal (24); enclosure (5); removal and encapsulation (9); and miscellaneous (52). The largest of the removal projects were located in the Metro Toronto area. One could usefully speculate on what might explain these different "implementation" responses. Three factors can be usefully explored, namely, access to expertise, media and related parental pressure, and relative economic status.

With respect to access to expertise, it is worth noting that the Metro Toronto Board conducted the most elaborate review of the technical questions involved. It did not conduct new research but it went through a process of discussion and review.³¹ Other boards received the Metro Task Force Report but did not take part in the process itself.

There is little doubt that media pressure was strongest and most persistent in the Toronto area. This may also have added impetus to choosing the "removal" option since removal can be more visibly seen by concerned parents to be a permanent solution whereas encapsulation does not have these reassuring political properties. This is not borne out, however, by the Hamilton area preference for encapsulation despite heavy media exposure there.

It is possible, of course, that the Toronto area, because of its comparative wealth, can simply afford "Cadillac" solutions while others make do with less. Other boards (with the Ministry of Education's implicit encouragement) viewed encapsulation as a less expensive short-term solution. They do not appear to have been aware of, or given much credence to, the technical argument advanced by some that encapsulation sealants would only be effective for a few years³² nor to its long-term economic corollary, namely, that it would be wiser to remove asbestos once now at current prices rather than encapsulate or repair the sealant several times in the future with all the accompanying increased costs. Another potential cause of the different response might be that in Toronto more schools were multi-story structures thus requiring more asbestos in their construction. There is no evidence, however, that Toronto's schools are different from other major cities in Ontario in this respect.

The problems of scheduling the work could also have exerted a pro-encapsulation bias. Work must generally be carried out in the summer or other holiday periods when the schools are not occupied. More encapsulation work could be done in more schools in any given period of time than would removal work. This factor would have operated in the Toronto area

as well but was not a sufficiently strong factor to outweigh the possible cumulative effect of the Toronto area's greater access to expertise, stronger media pressure, and perhaps greater ability to afford more immediate capital intensive solutions.

The above explanation is tentative in nature. One is nonetheless faced with quite different patterns of implementation regarding the central problem of choosing whether to encapsulate, enclose, or remove.

The Selection and Qualifications of Contractors and Consultants

Once the desired control option had been decided upon, school boards then faced the problem of selecting a contractor and often a consultant to supervise the contractor's work and to write up the specifications of the tender. Larger school boards usually had their own staff capable of writing up the specifications. For some small jobs the work could be carried out by the board's or the particular school's own staff. A dominant feature of the first two years of the Ontario asbestos in schools program was the absence of qualified personnel knowledgeable about, and experienced in, the use of asbestos. Virtually everyone had to learn through experience.

The larger school boards went through a pre-tender process of screening out contractors unqualified to do the work. As noted in the first section of this chapter only about six to ten firms were deemed to be qualified by officials in Metro Toronto. Determining qualifications was very judgemental in nature. It was based partly on previous knowledge of the firms, advice from consultants and the Ministry of Education, and some evidence of special asbestos knowledge (such as taking the

ORF course). As jobs were completed, word-of-mouth information was quickly exchanged, especially in the Toronto area, about which contractors were doing a good job.³³ To obtain some additional leverage over contractors some boards selected firms involved in the painting industry since the latter would have an even greater incentive to perform well so as to maintain their longer-run business relationship with the board.

There is little doubt that the quality of the workforce employed by the different firms varied greatly. Firms varied in the kind of training they passed on to their workers and the kinds of equipment they used. Some firms charged others with using cheap student labour, thus undercutting them in bids for work. While we cannot substantiate these claims they are not surprising. A new 20 million dollar regulation-induced market was being created, and thus competitive practices of this kind could easily develop.

The variable quality of contractors and their workforce was also aided by the physical reality of having to schedule the asbestos work in the cramped summer construction season. This meant that several boards were often chasing the same small band of qualified firms and consultants and the contractors had to staff-up rapidly for the summer "asbestos" season.

Special problems were encountered by smaller school boards, including situations where work was carried out by the board's or school's own staff. The work was often done quickly and without knowledge of the precautions that should be followed.

Some additional financial assurance of quality was available to the school boards because of the requirement that the firms post performance bonds. Some boards found, however, that they had to lower their normal 75% of cost requirement for these bonding provisions to 50% to enable the firms to post the bonds. This was because the removal work had a higher labour versus material cost component than traditional construction projects had.

For many boards the role of their hired consultants was critical. For some boards the consultants co-ordinated the control project in all its phases: taking surveys of asbestos materials; writing the specifications of the control job; helping to choose the contractor; inspecting the worksite while work was underway; and ensuring that proper air samples were taken at the conclusion of the project. For others, the consultants' role was confined to the last two aspects of the work. Consultants, moreover, were an even more scarce resource than contractors and hence worked for several boards. This was an informal source of continuity and co-ordination and helped shorten the general asbestos learning curve. On the other hand, such individuals could not be everywhere at once and hence some of their work undoubtedly suffered, especially when daily worksite inspections were required.

The problems experienced with contractors, consultants, and the asbestos workforce in the schools program raised larger issues about the advisability of licensing such firms and about other aspects of education and training. We will return to this question in the concluding section of this chapter.

Variations in Costs

The intricate relationships in the implementation process between health and safety effects, technical competence and skill, and economics is well illustrated in the asbestos in Ontario schools situation. These relationships are to be found in two issues which largely determine the variable costs evident in the schools asbestos control projects. They raise again the question of "Cadillac" regulatory solutions and quality control, including the regulators' ability to ensure quality and evenness of performance across all sizes of school boards and schools. The first issue involves the relative costs of encapsulation versus removal. The second issue involves cost differentials (once the choice of controls has been made) arising from the differences in the cost and quality of labour used in either encapsulation or removal projects. Both of these influence the exposure of workers in the actual removal process.

We have already discussed some aspects of the first issue. Encapsulation was chosen by the great majority of school boards primarily on the ground that it was considerably less expensive than the removal of asbestos. For example, the costs of control projects financially assisted by the Ministry of Education between September 8, 1980 and February 17, 1981, were as follows:³⁴

Dollars	Number of Schools
\$100,000 or more	8
\$ 50,000 to \$99,999	5
\$ 25,000 to \$49,999	21
\$ 10,000 to \$24,999	43
\$ 5,000 to \$ 9,999	39
\$ 1,000 to \$ 4,999	56
Under \$1,000	<u>42</u>
TOTAL	214

The average approved cost was 30,844 dollars per school.³⁵ Most of the projects over 100,000 dollars were for removal of asbestos.

The boards in general clearly believed encapsulation to be cheaper and this is borne out by these figures. However, one recent feasibility study produced a somewhat more mixed set of conclusions, albeit based on a confined experiment using only one kind of sealant. It concluded:

Economically, there is relatively little difference in the cost of removing the loose fibrous asbestos and sealing it. Equally rigorous control measures are required as masking and patching activities and high velocity liquid streams may dislodge asbestos material. The basic economic advantage of a sealant lies in the absence of a need to replace the removed asbestos, either with a hung ceiling or other acoustic material. Cost considerations, however, tend to favor sealing for cementitious materials. As the asbestos is often well encapsulated and the asbestos matrix has good adherence to the underlying substrate simpler containment procedures may be acceptable, reducing the cost of sealing. Furthermore, the good adherence to the substrate is a disadvantage for removal and increases the cost and difficulty of that procedure. Nevertheless, in spite of economic advantage, one should still consider the consequences of allowing the asbestos to remain in place. It may subsequently be dislodged during maintenance and renovation activities, and during ultimate demolition of the building, containment could be required. Furthermore, one may not have complete assurance that the asbestos matrix will remain locked to the substance. Water damage and physical abuse could produce dislodgement in the future.³⁶

At the very least this view, which was in general supported by other experts whom the authors consulted, suggests that there should not be such a large difference in the costs of removal versus encapsulation if the latter is being done properly by qualified persons. We cannot conclusively prove that cost differentials arising from the basic control

options are excessive but it is important to raise the question if one is to understand the implementation process. If encapsulation is not being done properly then workers may be at as great a risk as they are in the removal process. A separate study conducted by the Ontario Research Foundation for the Royal Commission on Asbestos will examine the cost of building control in some detail.

This question is linked to the second issue noted above. Boards did experience wide differences in the bids. This led to some concern about low bidders using cheap and/or unqualified labour (by far the largest cost component in either encapsulation or removal projects). While this is certainly a problem which contract administrators have to be aware of, they should have ample basis on which to screen out such contractors if their pre-tender eligibility processes are devised properly.

Inspection and Compliance in Removal and Encapsulation Projects

The processes used to ensure proper inspection and compliance in the actual removal and encapsulation projects have evolved after some early confusion and uncertainty. Under Regulation 691, the Construction Health and Safety Branch is required to be notified of all construction projects exceeding 50,000 dollars.³⁷ Even in the absence of this notification mechanism the jurisdiction of the Branch should apply. It is obvious, however, from the previously cited data on project costs that most asbestos control projects (199 of the 214) were below this figure. Because of this it is evident that the Branch was unaware of many of the projects underway in 1980 and did not provide any inspections in most of these projects and in others the frequency of day-to-day inspections was not adequate.

The Ministry of Labour recognized these inadequacies (partly due to the criticism by unions) and early in 1981 set up a system to ensure that all such projects in schools are inspected by its officers in the Construction Health and Safety Branch. The system includes the following elements:

- (a) The Branch now receives copies of the capital grant approval forms issued by the Ministry of Education. Copies of these forms are sent to the appropriate district office to inform the Manager there and his inspectors of the likelihood that asbestos control work will go ahead in specific schools in their area. In all these circumstances, an inspection of the way the asbestos removal or encapsulation is being done is carried out by a Construction Health and Safety Inspector.
- (b) All the Construction Health and Safety District Managers have been instructed to set up meetings with senior officials of school boards in their areas. Preconstruction meetings with individual contractors are then arranged and the asbestos removal or encapsulation procedures are reviewed. Normally, a representative of the Occupational Health Branch is present at the preconstruction review.
- (c) The Construction Health and Safety Branch maintains a record of the exposure of individual workers. During the inspection of a project involving asbestos the employer is asked to provide information on each worker exposed and the nature of the exposure. These records are filed in both the Construction Health and Safety Branch and the Occupational Health Branch.³⁸

While the procedures are clearly an improvement it is still somewhat problematical as to the degree to which the meetings with school boards are "required" as opposed to being merely encouraged. For example, the memorandum to field managers in the Construction Health and Safety Branch, dated February 23, 1981, merely exhorted them as follows:

I would suggest that you approach senior officials of the school boards in your area and discuss with them the aspects and problems associated with asbestos. From the attached list you can see that many of these schools are not required to notify our Branch, however, to eliminate any unnecessary and embarrassing situations in the future, you should suggest to them that when their repairs are to be carried out they get in touch with you.

Incidentally, for your information, I understand that one school board has been charged by the board's union for not taking proper precautions while removing asbestos.³⁹

Despite the softness of the instruction it is evident that pre-job meetings are being held at which time the contractor, along with the school board's consultant or own experts, reviews the procedures and precautions to be followed. All of this takes place without the use of explicit regulations on asbestos or on removal procedures. Inspectors, contractors, and the boards operate on the basis of understandings reached at these meetings. Inspectors base their inspections on documents such as "Recommended Minimum Procedures for the Protection of Demolition Workers." (See Appendix C.)

In Chapter 3 we described in some detail the compliance philosophy of the Construction Health and Safety Branch of the Ontario Ministry of Labour, the structure and organization of the Branch, and the backgrounds of its inspectors. We stressed the difficulty of putting into operation, in temporary worksites, the concept of an "internal responsibility system." For this Branch more than others in the Ministry of Labour frequency of inspection, including daily inspection, is the key ingredient in generating confidence that compliance is actually occurring.

While inspectors in the Branch have learned on the job about asbestos removal procedures, especially in 1981, they are not particularly well-trained in what to look for. This is candidly acknowledged by some officials in the Branch who privately argued that a special inspection force should have been created. They point out that the schools program adds a considerable burden to the small band of inspectors who must already bear their highest normal general inspection load in the cramped summer construction season. It can therefore be said that there is considerable awareness of the inadequacies of the early inspection process, and an increased frequency in 1981 inspections, but that the Branch is still not particularly well-equipped to handle this task, given the scope of its normal construction industry coverage.

In the early phases of the schools program and even in the 1981 phase, it was the school board's own technical staff or its consultants that performed the most significant regular "front-line" inspection function. These professionals were far more likely to be at the worksite every day and at different times each day than were the inspectors of the Ministry of Labour. They frequently submitted daily hand-written report notes to the school boards. Obviously the consultants' prime allegiance was to the school board. They had no obligation, or legal power, to enforce provisions in The Occupational Health and Safety Act. The consultants' presence at worksites, and their generally greater expertise with asbestos was, however, an important factor in preventing a bad situation from becoming worse, especially during the 1980 asbestos "season."

One further difficulty encountered in the implementation phase was the need to test air samples for asbestos dust levels after a control project had been completed. Contractors often felt this was not part of their job and did not include it as part of their estimated costs. This problem became less of a concern as experience was gained. The question of who does the testing and quality control of the testing does seem, however, to have been left a bit too much to chance. The Ministry of Education, the boards, and the Ministry of Labour have often not specified who should do the final testing.

Transportation and Disposal of Waste Asbestos

The final stage of the implementation of the controls program is the transportation and disposal in dump sites of the removed asbestos itself. It is acknowledged by many that this is a further weak link in the compliance chain. At time of writing, guidelines for the "Handling, Transporting, and Disposing of Waste Asbestos Material" are being drafted by the Ministry of the Environment.⁴⁰ The main philosophical premise and operating attributes of this part of the control system, as set out for regional staff of the Ministry of the Environment are:

(1) Waste asbestos material shall not be considered as hazardous waste or liquid industrial waste; and therefore the present way-bill form will not be required for asbestos waste.

However, the District Officer shall keep a record of those disposal sites which have accepted asbestos wastes. A copy of such records must be sent to the Waste Management Approvals Unit of the Environmental Approvals Branch.

(2) Normally rigid and air-tight containers should be used for packaging asbestos waste. Six-mil polyethylene bags cannot be used alone. Where six-mil polyethylene bags are used in conjunction with cardboard boxes, the volume of the cardboard box cannot exceed one cubic foot.

(3) Where the bulk handling method is used for the removal, transportation and disposal of asbestos waste, regional discretion should be exercised in determining specific operational and control requirements depending upon the type of equipment to be used. It is suggested that a regional staff be present during the disposal (unloading) operation. Every possible step should be taken to minimize "back spill" of splash.⁴¹

The guidelines provide quite detailed requirements which, if carried out, would ensure safe disposal. There is, however, little indication of the degree to which these provisions can effectively be monitored by regional staff of the Ministry. The early asbestos removal projects in 1980 and even 1981 do not generate confidence that this final aspect of control has been carried out properly. There is at least strong anecdotal evidence presented to the authors by numerous persons interviewed that this phase of control has been treated with considerable nonchalance and an abiding "hope" that "somebody" was looking after it. In contrast to actual removal worksites where the board's consultants provided some compliance protection, there were no consultants present for the final burial rites in the disposal locations.

It is essential to mention one further final technical dimension to the implementation process in the schools program, namely, the vetting, testing, and approval of the sealants used for encapsulation and of the substitutes for asbestos. As noted earlier in this chapter, the substitutes and sealants were certified as acceptable for their fire protection

attributes only by the Fire Marshal's Office. This Office based its view on those products approved, or at least listed, by the Underwriters' Laboratories of Canada Ltd., Underwriters' Laboratories Inc., and the National Research Council. This was a reasonable procedure under the circumstances but the schools asbestos case does show the degree to which regulators are dependent upon the technical judgement of these other public and private agencies, including those located outside of Canada. The vetting of these products, moreover, is a limited one since the health and safety attributes (other than fire protection) are not specifically assessed.

Asbestos Control in Other Building Sectors

We have focused on the asbestos control program in Ontario schools. Asbestos obviously exists in countless other public and private buildings. Indeed, a key policy decision for all Canadian governments is the degree to which they will encourage or require asbestos control programs in hospitals, museums, transportation facilities, and office towers, to name only a few of the other building sectors. Obviously some of these sectors have already been influenced by the schools program, by the publicity surrounding it and by the work of the Royal Commission on Asbestos itself. We will simply note these developments briefly. While each of these sectors have their own physical peculiarities and cost configurations, the regulatory and control issues are essentially the same. In terms of the total cost implications of such a program, it is clear that it would be a very costly venture, several times the magnitude of the expended and projected costs of the schools control program.

Universities and Colleges

Ontario universities and colleges received essentially the same information and guidance from the Ministry of Education as did the schools, including copies of the Metro Toronto School Board Task Force Report. The approach, however, was much more low key and was accompanied by no special financial assistance as was offered to the school boards. Universities would have to utilize part of their existing (and shrinking) normal capital budget funds. The decidedly second order priority status of universities and colleges was partly a product of limited financial resources, as well as a judgement that university and college students were older, stayed in university buildings for shorter periods of time and hence were less at risk than school children.

Universities and colleges have begun asbestos review and control programs but because of financial restraint the pace of implementation is bound to be slower than in the schools. For example, the system consists of over 2 billion dollars in physical plant. The capital budget (including repairs/alterations) is now only about 13.5 million dollars. In 1980-81 only about 40,000 dollars was spent on asbestos control. About 600,000 dollars in high priority asbestos work has been identified by the universities for 1981-82.⁴²

University officials point out, moreover, that asbestos control projects must compete not only with other general capital projects but even within new health and safety induced capital demands. For example, the Ontario Occupational Health and Safety Act now applies to universities which are being subjected to orders in traditional realms of safety. Health and safety committees have been formed in universities and this

further increases the agenda, including concern for hazards in biological research. Fire codes have also been made tougher and hence impose additional costs on universities.

Hospitals

In its written submission to the Royal Commission on Asbestos, the Ontario Hospital Association, which includes all 244 public hospitals in Ontario, concludes that "at present there is some confusion because of lack of standardization and specific direction with respect to remedies and safe alternatives."⁴³ It also stressed the fact that hospitals could not shoulder the large costs of a full asbestos control program.

On April 10, 1980, in the midst of media exposure about asbestos in schools, the Planning Branch of the Ministry of Health sent a low key letter to all 244 hospitals (see Appendix D). Basically, it suggested that the hospitals look over their facilities, aided by their architects, to see if an asbestos problem exists. The Ministry of Labour's guideline document on inspecting buildings was enclosed. The Ontario Hospital Association also invited the hospitals to report on asbestos problems. It concluded that:

Most of the 101 hospitals that contacted us stated either that they have no asbestos in their buildings, or that the type and form of asbestos is not considered to be a hazard in its present state.⁴⁴

In the 1981-82 fiscal year, the Ministry of Health has allocated a sum of 750,000 dollars for corrective action, most of it for encapsulation.⁴⁵ The hospitals involved have gone through the same learning experience as the schools in obtaining contractors and inspecting the control work.

Hospital and Ministry of Health officials seem to be confident that they have avoided many of the asbestos problems over the years because in hospital construction they have had to design buildings with special concern about ventilation and sources of possible infection arising from all kinds of dusts.

Other Buildings

There have been asbestos control programs in other buildings such as the Toronto subway system and a Bell Canada facility in Toronto to name two. Again, problems were similar to those in the schools case. Our research does not enable us to say more about these specific developments or about other important sectors such as private office buildings.

CONCLUDING OBSERVATIONS

There are two general issues arising from the asbestos control program in Ontario schools which present problems that must be overcome if future hazards are to be dealt with properly. The first issue is the mixed environmental and occupational content of hazards which arise in the internal environment or building sector. The second issue is to ensure that where repair or removal of the hazard is deemed to be the appropriate solution to protect the health of the general public, that such repair or removal activity is carried out at a pace and in a manner that ensures the protection of the workers involved.

Concerning the first problem, it is evident that the regulator of health and safety in the building sector must deal not only with the owner of the building but also with workers employed in the building and the general public who use it (children, visitors, customers, etc.). If standards or guidelines are applied the central issue is which standards, environmental or occupational, should apply. Given the mixed occupational and environmental content of the regulatory problem and given the complex patterns of traffic and use in the building in question, we see no alternative but to adopt the principle that the usually more stringent environmental standard should prevail. The development of a building standard for a particular hazard, separate from the occupational and outdoor environmental standard, would seem to us to be theoretically possible. In practical terms, however, it would produce even more regulatory and jurisdictional complexity than is necessary. The schools case study raises obvious jurisdictional concerns about the respective roles of MOE, MOL, and such ministries as Education and Consumer and Commercial Relations. We will address this question in Chapter 5 in the context of our overall conclusions.

The second issue is also closely linked to the mixed occupational and environmental clientele but deals more specifically with controlling the pace and manner of implementation of removal or repair activity in temporary worksites. We have seen in this chapter how the regulators response to the perceived health threat to children was relatively swift but that the speed of the response put workers involved in the removal and repair activity at an even greater risk since there was a lack of knowledge about how to proceed and an inadequate inspection capability.

The implementation of the asbestos control program in Ontario schools in the past two years shows that a painful learning process has been underway. Improvement can be detected in the 1981 phase of the control program compared to the 1980 activity, but several other improvements and reforms are necessary, not only for the asbestos program, especially if the future regulation of hazards in the building sector is to be put on a firmer footing. Reforms are needed at all stages of the implementation and enforcement process and will be the focus of our remaining observations.

Regulatory Philosophy for Temporary Worksites

We agree with the Construction Safety Association of Ontario and with the unions that standards per se are not in themselves a feasible basis for regulating hazards in buildings where temporary worksites are involved. Standards can be a part of such a program but they should be given a legal basis and hence made more certain. This will require an appropriate regulatory process in line with those examined in Chapter 3. The difference between regulating by standards and regulating "by procedure," as the Construction Safety Association of Ontario calls it, is that the former is based on setting a standard and then leaving the means of achieving it largely to the industry. The procedural approach regulates by specifying the means in some detail on the assumption that good procedures will produce good outcomes. A necessary corollary to the procedures approach, to be discussed below, is a visible effective "everyday" inspection capability armed with the necessary sanctions. Since construction projects are by definition temporary the control sanctions must be capable of immediate operation during the lifetime of the project.

Mechanism for Advice on Hazard Identification and Control in Buildings

The asbestos in Ontario schools case shows the need for a permanent mechanism within the Ontario government to monitor potential hazards, impart information about them, and suggest control remedies for them. This has been recognized by the creation of the Interministerial Committee referred to earlier in our analysis. Such a committee is undoubtedly necessary but its successful operation is very much dependent upon the provision of adequate staff support. It must also be given resources to provide information, on a timely basis, to public and private institutes involved with particular hazards. When suggesting control programs, moreover, the Committee will also have to assess the economics of the control options and address the question of who should pay for them.

Licensing of Contractors?

The schools case might suggest to some the need for formal licensing of contractors to ensure proper qualifications for specialized hazard control work. We believe that formal licensing would be unwise in that it could lead to numerous special licensing arrangements for specialized parts of the construction industry. This would lead to an even more bureaucratized industry than already exists. While problems were present in the schools program we believe that control can be maintained through requirements for information and qualifications in the normal pre-tender and actual tender processes. Additional assurance would be provided if courses such as the ORF course on asbestos were given at public expense to at least some of the front-line workers on these projects.

Special Buildings Inspectorate?

On the assumption that hazards in temporary worksites are likely to be a concern for several years to come, the question arises whether it would be prudent to create a special branch in the Ministry of Labour to deal with these problems. The branch could be composed of persons with additional health training in hazardous substances and able to devote themselves full-time to the persistent everyday inspection that these types of projects seem to require. Many of the problems would be analogous to those encountered by the Construction Health and Safety Branch and hence close contact with this Branch would be necessary. As stressed above, there can be little doubt a tough and vigorous inspection capability is a necessary corollary to the "procedures" philosophy of regulation in the building sector. This issue, however, involves a broader series of questions embracing the jurisdiction over the building sector in general and such related questions as a stronger primary role for the Health Branch of the Ministry of Labour. We will address this issue in Chapter 5.

Handling, Transportation, and Disposal of Hazards

The Ministry of the Environment's belated guidelines on this final phase of control are much needed. The presence of the guidelines will undoubtedly help but their full impact can only be felt if ongoing inspection and monitoring can be provided by the Ministry of the Environment. This is not a likely prospect given the demands now made on the regional and district offices of the Ministry. Once again, new resources are needed. The Ministry of the Environment has other potential responsibilities in the building sector but we will discuss these in Chapter 5.

NOTES TO CHAPTER 4

1. In addition to the sources cited below research for this chapter is based on interviews with officials in ten Ontario school boards, university and hospital officials, regulators, union spokesmen, persons involved in the construction and removal industry, and independent technical experts.
2. See G. Bruce Doern, The Politics of Risk: The Identification of Toxic and Other Hazardous Substances in Canada, Study No. 4 prepared for the Royal Commission on Asbestos (Toronto: The Commission, 1982), Chapter 2.
3. See The Education Act, R.S.O. 1980, c.129, sections 149 and 236. See also Royal Commission on Asbestos, Transcripts of Public Hearings, Vol. 3, Wednesday, 18 February 1981, and Vol. 4, Thursday, 19 February 1981.
4. See Ontario Ministry of Labour, Supplementary written submission to the Royal Commission on Asbestos, #61, March 1981, Appendix IV and VIII.
5. Ibid., p. 8. The Ministry of Labour's role is analyzed in detail in Chapter 3 of this study.
6. Ibid., Appendix VI and VII.
7. Doern, op. cit. note 2, at Chapter 2.
8. Interviews.
9. Interviews.

10. Ontario Ministry of Labour, op. cit. note 4, Appendix VI.
11. Loc. cit.
12. See Doern, op. cit. note 2, at Chapter 3.
13. For a rare exception to this fact see Christy McLaren, "Asbestos rule not enforced, probe told," Globe and Mail, 9 June 1981.
14. See Ontario Research Foundation, Annual Report 1979 (Toronto: 1980), pp. 10-11.
15. Doern, op. cit. note 2, at Chapter 2.
16. Ministry of Labour, op. cit. note 4, at p. 8.
17. Ibid, p. 8.
18. Construction Safety Association of Ontario, Written submission to the Royal Commission on Asbestos, #33, January 1981.
19. See Michael Prince and G. Bruce Doern "Standard-Setting and Implementation in Ontario: The Views of Major Institutions," draft (1982), Chapter 3.
20. See Ministry of Labour, op. cit. note 4, Appendix II(a).
21. Ibid., p. 10.
22. Ibid., Appendix VIII.
23. Date supplied by the Ministry of Education. Letter from S. Orlowski to D.N. Dewees, 21 August 1981.
24. Ibid, Appendix IV, page 7.
25. Ibid., p. 11.
26. Loc. cit.

27. Advisory Task Force on Asbestos in Schools, Report (Toronto: Metropolitan Toronto School Board, May 1980), pp. 80-81. See also Transcripts of Public Hearings, op. cit. note 3, at Vol. 3, pp. 113-115.
28. Interviews.
29. Interviews.
30. Interviews.
31. See Transcripts of Public Hearings, op. cit. note 3, at Vol. 3, pp. 110-115.
32. This view was expressed to the authors in interviews by some but not all the experts consulted.
33. See Transcripts of Public Hearings, op. cit. note 3, at Vol. 3, pp. 110-115.
34. T.E. Armstrong, Deputy Minister of Labour to Dr. J. Stefan Dupré "Information Requirements Arising from the February 19, 1981, Ministry of Labour Appearance Before the Royal Commission on Asbestos" (Toronto: 21 April 1981), p. 1.
35. Loc. cit.
36. William J. Nicholson et al., Control of Sprayed Asbestos Surfaces in School Buildings: A Feasibility Study (New York: Mount Sinai School of Medicine of the City University of New York, Environmental Sciences Laboratory, 1978), pp. 36-37.
37. Armstrong to Dupré, "Information Requirements....," op. cit. note 34, at p. 2.
38. Ibid., p. 2.

39. Memorandum from D.M. Pizak, Acting Director, Construction Health and Safety Branch, to Managers, Construction Health and Safety Branch, Ministry of Labour, 23 February 1981.
40. Ontario Ministry of the Environment, Waste Management Branch, "Guidelines for the Handling, Transporting and Disposing of Waste Asbestos Material," Revised Final Draft (Toronto: July 1981).
41. Ontario Ministry of the Environment, "An Outline of the Administrative Direction with Respect to 'Guidelines for the Handling, Transporting and Disposing of Waste Asbestos Material'" (Toronto: July 1981).
42. Interviews.
43. Ontario Hospital Association, Written submission to the Royal Commission on Asbestos, #57, March 1981, p. 3.
44. Ibid., p. 2.
45. Interviews.

CHAPTER 5

CONCLUSIONS

In previous chapters we have offered several concluding observations, including those particular to each of the three sectors: the workplace, the outdoor environment, and buildings. In this chapter we bring our major conclusions together in summary form. We have stressed throughout our analysis the inevitable contradictions which exist among the values, principles, and processes of health and safety regulation and implementation. These include contradictions which arise when general standards must be applied to the myriad of unique circumstances faced by firms, municipalities and regions; when tough "standards" are enforced flexibly and when loose "guidelines" are enforced rigidly; when inspectors are expected to be both tough cops as well as conciliatory mediators or even social workers; and when prosecutions can be seen to be both an indicator of regulatory success or regulatory failure depending upon the eye of the beholder. Contradictions arise even when major interests agree on the objectives. Both labour unions and management agree with the "internal responsibility" philosophy which underpins the regulation of the workplace in Ontario but the unions are very critical of the means used and the slow progress made. We find ourselves agreeing with some of the union criticisms but equally we are obliged to point out problems and contradictions which they and other groups seem unprepared to acknowledge publicly.

These and other contradictions in the way people judge the success of regulatory processes and outcomes were examined in a general way in Chapter 1, and in more specific ways in the analysis of the three sectors. We conclude that the fundamental contradictions do not have a "solution." Improvements can occur but only by balancing the contending values, not by permanently resolving them.

Thus the existence of contending ideas and of the tug and pull between regulatory process and performance need not, in themselves, immobilize progress. In each of the three sectors of health and safety regulation examined in Chapters 2, 3, and 4, we have seen certain regulatory strengths and numerous regulatory weaknesses. These strengths and weaknesses emerge in part by comparing the performance of one Ontario government ministry to another. In other respects our criteria for judging success are more subjective and arise from comparisons with other countries and from general normative concerns.

We conclude that there are at least four criteria important for judging success. These are invariably and unavoidably a mixture of process and performance criteria since both process and performance are valued in a democratic setting. We have sought evidence of the existence of a balance among these criteria recognizing, however, that some criteria will conflict with the others. These criteria are:

- (a) Health and Safety Effects: There must be in evidence public processes for determining the existence of health and safety effects in as scientifically objective a manner as possible. This implies the need to establish reasonable scientific causality or to otherwise resolve scientific and technological controversy.

- (b) Open Consultative Regulatory Processes: There must be evidence of an active effort to consult interested groups in standard-setting and guideline-setting processes and evidence of an effort to present useful information to the public on the implementation and performance of the regulatory program.
- (c) Reasonable Speed in Regulatory Decision Processes: The process must have a capability to make decisions with reasonable speed. This implies the need to ensure that debates over scientific causality and economic feasibility are held in a deliberate and regular way.
- (d) Cost-Effective Regulatory Solutions: Economic considerations will and should be a part of final regulatory procedures. The process should show evidence of ensuring that economic factors are a part of the public politics of regulation rather than only its private "behind-the-scenes" politics.

We have based our remaining observations about each of the three sectors of health and safety regulation in Ontario on these general criteria. The observations are presented both for standard-setting and for implementation in each sector. In each instance we offer first some general observations and then more particular ones about Ontario practice and the need for reform. In the final section we recommend specific organizational and procedural changes, both to improve central co-ordination of health and safety in the Ontario government as a whole and to improve standard-setting and implementation in the three sectors.

STANDARD-SETTING

Improved Consultative Processes

There is a need for more formal consultative approaches in the setting of standards and guidelines in Ontario without adopting the excesses of "due process-itis" which plague the American regulatory scene. Both

business and labour groups are leery of adopting the American approach, particularly its inevitable reliance on the courts. Better consultative processes will slow down the regulatory process but should produce better and more accepted standards and guidelines. These consultative processes should be enshrined in law and apply to both standards and guidelines. The processes should include the requirement that draft regulations and guidelines be published; that background scientific, technical, and economic studies be published; that reasonable opportunity for making submissions be given; and that regulators be required in public meetings to give reasoned explanations in direct response to the submissions presented to them as to why the final standards and guidelines have been adopted.

With respect to these standard-setting processes the Ontario Ministry of Labour is well ahead of the Ministry of the Environment, and hence the greater reform is needed in MOE. The building (or internal environment) sector is the weakest of all and involves both MOL and MOE. In the building sector, future regulatory effectiveness involving temporary worksites will have to be based on a detailed "regulation by procedures" approach, rather than relying on standards per se. These should also be developed through the consultative process as outlined above.

Standards Versus Guidelines

We believe that the inventive efforts to distinguish between standards and guidelines in health and safety regulation is largely counter-productive. Guidelines are held to be necessary to reflect situations where there is greater technical and scientific uncertainty. Some argue

that they are less enforceable in a court of law. At the same time there is an apparently general recognition among regulators in the workplace and environmental fields in Ontario that standards and guidelines are treated in much the same way in day-to-day regulation and are equally "obeyed" by regulated firms and institutions. Moreover, guidelines are often applied rigidly and standards are often applied flexibly. It would appear that, in general, regulations and guidelines represent a distinction without a difference. They are, however, a frequent source of dispute and also some confusion. For unions the existence of "guidelines" suggests a soft and less aggressive regulatory posture. If there is no overriding or real difference, and yet the effort to make a distinction contributes to a further lack of faith in the regulatory regime, then we suggest that both those rules that are called standards and those called guidelines be treated the same way and be promulgated through consultative processes suggested above and through the provisions of Ontario's legislation regarding statutory instruments.

The Burden of Proof in Standard-Setting

Labour unions have emphasized the concept that the burden of proof should be on producers of a substance or product to show that it is safe rather than on others (especially workers) to show that it is unsafe. In our separate study on hazard identification we agreed with this concept as it applied to initial hazard identification. We agreed with labour unions that there exists a profound institutional gap in Canada in the technical identification of hazards. At this stage of the regulatory process the burden of proof should be on producers of a product or sub-

stance to show the health effects. The process should be devoted to the central question of determining the human health effects of particular products or substances. We recommended that a new national research agency be established to ensure that the burden of proof concept and other elements of the technical dimensions of hazard identification are more effectively present in Canada.

The question arises whether the burden of proof concept is as readily defended in the later stage of regulation when standards or guidelines are being suggested and promulgated. We believe the labour unions' concept of burden of proof cannot be defended as readily in these later stages. The reasons for our position are best discussed in relation to an issue closely connected to the concept of burden of proof, namely, the role of cost-benefit analysis in standard-setting.

The Role of Cost-Benefit Analysis

The burden of proof argument always begs the question, "burden of proof of what?" Once the human health effects are identified, standard-setting invariably and unavoidably involves questions of "proof" involving politics and economics. One is no longer judging just the existence of risk or health effects but rather the acceptability of risks and health effects. Such judgements cannot help but involve both the economic and political calculus of costs and benefits. Such a "calculus" can be primarily hidden, as it has tended to be, and based on private "behind-the-scenes" political and economic bargaining among the interests at stake. All parties in the health and safety regulatory process have practised such private political cost-benefit tradeoffs. Businesses do

it in the choice of capital equipment and the speed with which they install better health and safety technologies. Labour unions have done it by trading off (implicitly or explicitly) health and wage benefits, not to mention jobs and job security. Regulators do it by varying the speed of the regulatory response and the tenacity of their enforcement.

The question therefore is not whether one should have or will have cost-benefit calculus in the standard-setting process but whether it will be assessed privately or publicly. While we have no particular desire to create more employment for economists, we do think that, on balance, formal and more open political and economic cost-benefit analysis is preferable to a system based almost wholly on private cost-benefit bargaining. We are very conscious of the abuses of formal cost-benefit analysis but would still regard the need for such published assessments as a useful reform provided that they are accompanied by the other institutional changes needed for the initial technical identification of hazards noted above. We therefore regard experiments such as the federal SEIA process to be well worth trying in a regular way in the Ontario government. They should be a formal and public part of the consultative approach proposed above.

Mechanisms for Resolving Scientific and Technical Disputes

In all three sectors there is evidence of the lack of a suitable mechanism for dealing with scientific issues. To handle the formidable future agenda of toxic and carcinogenic substances all three sectors in concert (but especially the Ministry of Labour) will have to devise ways of more quickly resolving scientific issues and avoiding needlessly repe-

titious technical arguments each time a new hazard emerges. While we have rejected American "due process" provisions in their extreme general form, we believe that the OSHA Cancer Policy procedures for handling scientific evidence (examined in Chapter 1) have the potential to speed up the decision process and hence should be adopted in Ontario with the necessary institutional modifications required by the Canadian parliamentary and legal systems.

It must be stressed that one of the major reasons for organized labour's extreme, but often justified, mistrust of the regulatory process in health and safety matters is the repetitious and time consuming use of technical arguments to forestall or delay action. That part of the OSHA Cancer Policy which provides rules about corroborative evidence can help resolve these questions more readily and hence increase respect for the standard-setting process. The OSHA approach is clearly not the whole answer to such repetitious disputes but it deserves very favourable consideration provided it is accompanied by other changes in the production of better public information and in the development of priority lists of hazards in the early hazard identification process. These reforms are outlined in detail in the separate study on this subject.

Standard-setting in the "health" as opposed to traditional "safety" fields will require these new institutional and procedural approaches if there is to be any confidence among the major interests involved that the standard-setting process is open, fair, and reasonable; operates with reasonable speed; and is based on the best available scientific and technical data.

IMPLEMENTATION AND ENFORCEMENT

We have stressed throughout this study that implementation and enforcement were perhaps the least understood parts of the murky world of regulation. Several important features of implementation emerge from our comparative analysis of the three sectors.

Bilateral Versus Multilateral Compliance Relationships

We have pointed out that all implementation in the sense of ultimately achieving sustained desired changes in human behaviour is dependent upon private behaviour as well as the things that government officials do. In this context we have placed emphasis on an important difference between the environmental and labour sectors of health and safety regulation. The former involves primarily a bilateral relationship between the regulator and those regulated. In the labour sector the relationship tends to be a multilateral one between regulator, business, and labour. In the building (or internal environment) sector unions are present but in a largely ineffective way due to the temporary nature of worksites. The transient public which uses or enters a building periodically is, like the general public in the outdoor environment, largely unrepresented in the day-to-day compliance process. We believe these different compliance relationships are politically and institutionally significant. They guide some of the suggestions and recommendations outlined below.

Compliance Philosophies

The different compliance relationships are both a cause of, and a reflection of, the overall compliance philosophies in the three sectors. While all three sectors instinctively prefer the use of persuasion and negotiation and view the need to prosecute as a sign of regulatory failure, they have evolved in different ways in the clarity and explicitness of their compliance philosophies. The "internal responsibility system" of the Ministry of Labour is quite well-developed and explicit and is built into the training of inspectors in formal ways. The Ministry of the Environment's focus on the "approvals process" is much less clearly developed and articulated. A compliance philosophy seems scarcely to exist at all in the building sector. MOE and the building sector must develop a far clearer notion of their approaches to compliance taking into account the greater presence of the de facto bilateral regulatory relationship in which they must function. This lack of effort in devising their basic implementation concepts adversely affects other phases of the implementation activity, including the adequacy of staffing, inspection, and actual enforcement.

It is important to stress again that organized labour supports the idea of the "internal responsibility" compliance philosophy, and acknowledges that it is an improvement over previous approaches, but is extremely critical of many features of its practical operation.

In contrast, it cannot be said that environmental interest groups (which are politically weaker and less permanent than labour unions) have any clear appreciation of, let alone support for, MOE's compliance philosophy. It is difficult to imagine how there can be increased confidence

in the future in the environmental regulatory field if the basic compliance philosophy is so poorly articulated and understood. This weakness is all the more important in MOE's case precisely because there is no strong third party present in the day-to-day implementation process.

The Role of Inspectors and the Inspection Process

Staffing and inspecting are interrelated subjects. "How much staff is enough?" is an age-old bureaucratic question, all the more difficult to answer in an era when some groups want "less government," or "more enforcement but fewer enforcers"; and when it is widely believed that bureaucrats always want "more staff." We can offer no definitive answers as to how much more inspection and how many more inspectors are enough. We do suggest, however, that the inherent need for visible inspection varies in a general way in the three sectors. We conclude that the relative need for inspection is related to the bilateral versus multilateral nature of the regulatory relationships in the three sectors examined.

To the extent that workplace health and safety committees can be made to work properly, it would follow, ceteris paribus, that more inspectors per se are less obviously necessary in the case of the Ministry of Labour (with the possible exception of the Construction Branch) than in the other sectors. On the other hand, in the environment sector, where no third party institution of comparable power to labour unions is present, the case is stronger for greater inspection capability. In the situation faced by the MOE this is all the more necessary since field offices have not enjoyed any significant increased support in recent years but they

are being asked to take on more inspection activity in areas such as toxic substances and waste disposal. We, therefore, see no alternative to the need for increased field support for the MOE if there is to be any basis for increased confidence that inspections are occurring not only in these newer areas but even in the follow-up to the thousands of orders and approvals already granted over the years. At present there is little follow-up activity in the MOE; certainly, in our judgement, much less than in the Ministry of Labour.

In the building sector similar needs exist as in the MOE except under different extenuating circumstances. The physical characteristics of temporary worksites in this sector make the need for frequent visible inspection a mandatory requirement. We will link this below to the need for a strengthened primary role for the Occupational Health Branch within the Ministry of Labour to focus attention on this and other health matters. It cannot in our view be adequately carried out by the Construction Health and Safety Branch, given its current level of staffing, expertise, and workload.

With respect to the Ministry of Labour's inspectors it is useful to note that the perceptions of labour union spokesmen, as revealed in Chapter 3, add up to a mixed report card on the inspection function. While unions are critical of the role and level of expertise of inspectors (especially in the toxic substances field), they do (albeit sometimes grudgingly) concede that the inspector, under the post-Ham reforms, is not viewed as being captured by management. The inspector was much more likely to be viewed as a tool of management under the previous system.

At the same time, union spokesmen are able to differentiate their criticisms of the different branches of the Ministry of Labour. For example, some unions, as we noted in Chapter 3, saw considerable improvement in the Mining Branch and the Industrial Branch but were particularly critical of the Construction Branch (especially its inability to handle the asbestos removal issues in schools).

What can be said about the various rationales regarding the frequency of inspections? The degree to which these rationales have been well thought out varies not only among the ministries but also within them. One would not expect absolute uniformity in these rationales and practices because circumstances do differ in each sector as we have stressed repeatedly. We think it is reasonable to conclude that the computer-based system used by the Ministry of Labour's Industrial Branch reflects a reasonably sensible approach insofar as basic safety inspection is concerned. We would feel somewhat better about it if further data were made public about what happens in the follow-up inspections that are made on those persons or firms who do not comply when first required to do so, but generally the system in place reflects a judicious mixture of routine repetitive inspections with ample opportunity to keep a special eye on those with questionable past safety records.

The same cannot be said for the existence of a coherent inspection rationale in the Industrial Branch for toxic substances and health hazards. There is little evidence that the Ministry of Labour has developed an approach that would ensure confidence that inspections are occurring on a systematic basis. A similar vacuum exists in the role of the

Construction Branch as it affects toxic substances. The asbestos in schools case study in Chapter 4 shows that there was no concept in place to guide the inspection of temporary worksites.

To obtain greater coherence in the health mandate of the MOL we recommend that the Occupational Health Branch be given a primary inspection role. In Chapter 3 the data showed that this Branch was being called on more frequently by the other three front-line branches but that it was still a branch "on tap" rather than "on top." There are two major reasons for this suggestion. The first reason is simply that health matters must receive greater attention in all their attributes (standards, notification of new substance, and enforcement as identified in Chapter 3). The second is that there are inherent limits on how much "health" knowledge the traditional inspectors in the three front-line inspectorates can acquire. The analysis in Chapter 3 suggests that the inspector's role as implied ideally by The Occupational Health and Safety Act is a superhuman one. While it would be useful for traditional inspectors to be more "literate" about health matters, no amount of education and training will make most of them knowledgeable about health hazards.

As to the environmental sector, we have identified numerous problems, some of which are more glaring when one compares the MOE with the Ministry of Labour, and when one keeps in mind the fact that the environmental inspector operates in a bilateral compliance relationship and hence his inspection role is all the more essential to public confidence. The MOE lacks a computer-based system. The Ministry has only begun to think about how to inspect waste disposal sites and has a very limited follow-up activity once approvals are granted.

There can be little doubt that the issue of inspecting and regulating toxic substances places major new demands on the education and skills of the field inspector. It is fair to say that there are not enough inspectors with the requisite backgrounds in the ministries involved. Nor has enough attention been given to how the technical health experts in the Occupational Health Branch can work better with the inspectors with traditional backgrounds. We have drawn attention in Chapter 3 to the fact that the Ministry of Labour was reorganized to bring together under one roof inspectorates which had their own separate traditions and modus operandi. The Ministry's training and other programs do not appear to have included much thought as to how to weld the separate inspectorates into a more coherent whole, especially given the special problem of toxic substances which can show up in any and all sectors. As stressed above, there are limits as to what formal education can do, especially in the realm of health knowledge. But there are other aspects of the inspector's role such as the conciliation roles of the MOL inspectors where training could help a great deal.

Prosecutions and Enforcement

We come finally to the role of prosecutions in the implementation process. It is our view that in the long-run democratic context of regulation, prosecutions and penalties are the least likely way to secure sustained desired changes in behaviour if they are the primary force for change. In this sense the preference of Ontario regulators to use persuasion and bargaining is both understandable and desirable. There can be little doubt, however, that the tendency by Ontario regulators in all

three sectors to view prosecution as an indicator of regulatory failure is overdone and is an important source of the view held by some groups, particularly labour unions, that the law is not being applied fairly. Visible prosecutions where they are clearly warranted can also reduce the need for more inspectors since people will change their behaviour in anticipation of such coercive consequences. More information should also be made public in annual reports about the numbers and kinds of prosecutions that are launched and perhaps data on the number of cases where prosecution was seriously considered. Compliance data should also be collected and made public showing compliance patterns for large and small firms in the environment and labour sectors, and unionized and non-unionized firms in workplace health and safety.

Federal-Provincial Relations in the Implementation Process

The study has drawn attention to two aspects of federal-provincial regulatory implementation that are in need of reform. We have pointed out that some important information submitted by private firms to either level of government in the environmental field cannot by law be shared among these governments. In the regulation of chemicals and hazardous substances this legal bar will be a serious obstacle to future progress, especially given federal dependence on provincial action in the implementation phases of regulation. Such legal obstacles to sharing data should be removed.

The issue of federal dependence on provincial inspectors, especially in the environmental field, raises the question of political accountability. Even though the federal government depends on the provinces to im-

plement many of its regulations, there is little information in federal or provincial annual reports, budgetary material, or other public documents which would provide any basis for Canadians or their elected representatives to determine how well this activity is being carried out. In a similar vein, other aspects or possible indicators of Ontario's own performance and implementation are virtually non-existent, lost in a barrage of information about such items as the number of contracts let or applications processed.

No one, least of all the authors of this study, should underestimate the difficulty of presenting meaningful criteria for determining successful regulatory implementation. At the same time, it is important to point out that accountability has little chance of being exercised unless a concerted effort is made by Ontario officials to try to present a few such indicators in their public documentation.

REFORMS TO IMPROVE HEALTH AND SAFETY CO-ORDINATION IN THE ONTARIO GOVERNMENT

Existing Ontario Organization

To put the following organizational and procedural reforms in their proper context it is necessary to describe in summary form the existing health and safety machinery in the Ontario government. This task is aided by Chart 5.1. At the apex of the machinery is the Committee of Deputy Ministers on Occupational and Environmental Health. We have stressed in Chapter 1 that this Committee does not appear to have a very clear role in the ongoing standard-setting process. Next on the chart we portray the existing organizational state of affairs in each of the sectors we have examined. We see that there are widely varying organizational features in place.

CHART 5.1

PRESENT STATUS OF ONTARIO GOVERNMENT ORGANIZATION IN HEALTH AND SAFETY

Deputy Ministers' Committee on Occupational and Environmental Health

	Ministry of the Environment	Ministry of Labour	The "Building Sector" (MOE, MOL, C & CR, M.O.Ed.)
Standard-Setting Committee	Committee	No Committee	Committee (but only recently established)
Advisory Council	No Council	Council exists	No Council
Public Meetings in Standard-Setting Process	No	Yes	No
Other Ad Hoc or Indirect Opportunities for Public Input	Environmental Assessment Panels or Projects	Royal Commissions - Ham - Burkett - Asbestos	Royal Commission - Asbestos

With respect to the existence of a permanent standard-setting committee in these departments/sectors we note that MOE has had one in operation for several years (see Chapter 2); that in the building sector a committee has emerged out of the asbestos in schools controversy but with no real operating experience to date (see Chapter 3); and that the Ministry of Labour has no permanent committee of officials, preferring instead to rely on task forces or changing groups of people to develop standards as they are needed.

Concerning advisory councils, which provide a vehicle for the representation of interests and hence external advice, we can see that only the Ministry of Labour has had such a council to advise it. There is no equivalent body in either the building or the environmental sector.

When we examine the degree to which public meetings are built into the standard-setting process it can be seen that only the Ministry of Labour in recent years has made this a feature of their regulatory process (for designated substances). To complete the picture of potential public involvement, however, we note in Chart 5.1 the other irregular and indirect avenues for such involvement. They are indirect in that they do not necessarily involve standard-setting. Thus MOE does obtain some public input on some major projects (not standards) through environmental assessment hearings. The Ministry of Labour has been the object of three inquiries: the Ham Commission, the Burkett Inquiry, and the present Royal Commission on Asbestos. The last of these inquiries, of course, deals with all three sectors and provides an opportunity for public input.

Reforms for the Hazard Identification Process

Along with the above snapshot of the status quo it is also necessary to appreciate a point examined in detail in the study on hazard identification but also quite evident in Chapter 4 of this study, namely, the absence of a national centre of research which could become the focal point for the technical identification of hazards. We view the recommendations in the hazard identification study to be a necessary complement to the reforms examined below. We therefore repeat them here to ensure that they are clearly seen as a necessary part of the total organizational reform package and to show that the early identification stage must be related to the later standard-setting stages of regulatory activity.

In advocating the need for a national research agency in this field we took special note of the fact that there was a considerable danger that research resources would be divided too thinly among several institutions, no one of which could perform this vital function adequately. The early history of the Canadian Centre for Occupational Health and Safety and recent federal and provincial efforts to create a centre of toxicological research illustrated this all too familiar Canadian dilemma.

We recommended that the proposed national research agency for hazard identification should have the following role, scope, and governing structure. Its primary role should be to conduct and review research on the human health effects of products and substances that are used both in the workplace and/or in the environment. This would require it to examine and report on all four aspects of the technical identification of hazards. These would include:

- (a) the existence of a substance;
- (b) its condition;
- (c) its specific effects; and
- (d) the probability of it impacting on all or part of the population.

It would also suggest priorities for regulation to the several federal and provincial agencies engaged in the regulation of health and safety. The requirement that it advise on priorities would not only be useful to these agencies but would exert discipline on the research agency itself.

The scope of the agency's mandate should include both the workplace and the environment since, in the final analysis, hazards are interrelated. The environment should include the "internal" environment such as buildings as well as the outdoor environment. This is necessary since the same product may prove to be hazardous in quite different ways and to different degrees in each of these sectors and yet, at the same time, be closely related in all of them.

The agency should be governed by a council or board of directors composed of scientific and technical experts only. The representation of business, labour, and other interests should be accommodated not on this council but rather through other advisory bodies to the several federal and provincial ministries engaged in the later regulatory processes. Recommendations to ensure this important aspect of representation are outlined below. The structure of the proposed research agency must ensure that it will be an independent research institution that can command respect and credibility.

The agency should be considered a national resource. A national capability for toxicological research should be a central part of the proposed agency. One cannot stress too greatly the need for such an institution and the parallel requirement that it be given generous resource support. The prospects of future improvement in the hazard identification process are not great unless the technical aspects of hazard identification are recognized in a viable, independent institutional form.

Jurisdiction Over the Building Sector

We see the further changes proposed below as a logical complement to the proposed research agency. But before we present them we have to deal with one fundamental jurisdictional issue, namely, which agency or agencies should have jurisdiction over the building sector. The analysis in Chapter 4 showed that the building sector proved to be a jurisdictional jungle. In the asbestos in schools case the Ministry of Education moved into the jurisdictional vacuum but could not handle all aspects of the task properly. Certain aspects of the building sector are the responsibility of the Minister of Consumer and Commercial Relations. The new Interministerial Committee on Building Materials reports to him even though his ministry was scarcely involved in the asbestos controversy. The Ministry of Labour had a role concerning some school employees and in inspecting temporary worksites. The Ministry of the Environment should have been involved in inspecting the disposal of waste. There is also the issue of which agency is looking after the general public who enter and use buildings on either a periodic or longer-term basis (e.g., children in schools).

How does one sort out the jungle? One could make a case for locating responsibility for the building sector in any one of the Ministries of Labour, Environment, or Consumer and Commercial Relations. We believe that health and safety aspects of the building sector should be divided between the Ministry of Labour and the Ministry of the Environment for the reasons outlined below.

In the realm of health hazards to the general public who use buildings we see such hazards involving concerns similar to those in the larger environment. That is, the concerns are for a wide range of persons of different sex, age, and states of health. This is the diverse population that MOE must deal with in the larger outdoor environment. Standards for the larger environment are, therefore, more stringent than for the workplace. We therefore think that MOE should have a major role in regulating the internal environment to protect the non-occupational users of buildings provided it is given the resources to carry out the task properly. MOE will also need to play a role in regulating the disposal of waste material taken from buildings. In Chapters 2 and 4 we concluded that this was an extremely weak aspect of MOE's performance.

The Ministry of Labour should deal with the other major elements of the building sector arising from occupational use of buildings. It has a role in that workers in these buildings should come under the provisions of The Occupational Health and Safety Act. It must also take clear control of regulating temporary worksites such as those which arise when asbestos is removed or encapsulated in schools. The weakness of this latter function was plainly evident in Chapter 4. A strengthened role here requires an increased, persistent, aggressive, and visible inspection capability.

We have concluded, on balance, that the building sector should not be consolidated under a ministry such as Consumer and Commercial Relations, since the latter would have to build up a separate inspection capability, and co-ordination would have to embrace three departments rather than two, because MOE and MOL would possess the most extensive expertise in these fields regardless of the jurisdictional arrangement. Problems of co-ordination are difficult enough even when only two departments are involved. Moreover, if jurisdiction over buildings can be clarified in this way then the additional organizational reforms described below become more manageable. Chart 5.2 summarizes the new reformed machinery which we are recommending.

Deputy Ministers' Committee on Occupational and Environmental Health

We recommend first that the Deputy Ministers Committee on Occupational and Environmental Health be strengthened and its mandate broadened so that it becomes the focal point of an improved system of co-ordination between the environmental (external and internal) and workplace sectors (as well as other health and safety sectors not examined in this study). Its tasks should be to:

- (a) recommend and publish annual priority lists of hazards for each sector so that the interests involved have a better idea of the future agenda involved. The committee's priority lists could be based partly on the priorities suggested by the national research body proposed above as well as on other information emanating from within the ministries involved;

CHART 5.2RECOMMENDED ONTARIO GOVERNMENT ORGANIZATION IN HEALTH AND SAFETYDeputy Ministers' Committee on Occupational and Environmental Health

- strengthened
- broader mandate

Ministry of the EnvironmentMinistry of Labour

Permanent Standard-
Setting Committee

Committee

Committee

Advisory Council

Council

Council

Public Meetings in
Standard-Setting Process

Yes

Yes

Other Ad Hoc or Indirect
Opportunities for Public
Input

Environmental Assessment
Panels or Projects

Royal Commissions

The "Building Sector"

Regulating disposal of
waste material from
buildings

- Temporary
Worksites
- Public Building
employees under
The Occupational
Health and Safety
Act

New Formal Opportunities
for Input

OFL statutory right
to suggest three
hazards that require
regulation

(b) receive and scrutinize proposed standards emanating from the line ministries involved, ensuring that the proper economic and technical data have been prepared and made public;

(c) review and scrutinize special or abnormal major inspection or compliance cases.

The committee must be adequately staffed but generally would rely on the expertise of line departments.

Permanent Standard-Setting Committees

At the ministry level we see the need for two reforms. The Ministry of Labour should establish a permanent standard-setting committee to parallel that already in existence in the Ministry of the Environment. This is especially necessary to ensure greater technical continuity in the standard-setting process within each ministry.

Advisory Councils

We also recommend that an Advisory Council on Environmental Health be established to advise MOE, to parallel the Advisory Council on Occupational Health and Occupational Safety which advises the Ministry of Labour. Such a council, composed in part of representatives of public interest groups, is all the more essential to the environmental sector because of the absence of any effective third party presence in either standard-setting or enforcement. The proposed advisory council's mandate would be the same as the Council which advises the Ministry of Labour.

In the separate study on hazard identification we concluded that there were extra political difficulties in getting workplace hazards identified as compared to environmental hazards. Accordingly, we recommended that the provincial labour federation be given a statutory right to petition MOL regulators on an annual basis to suggest three hazards per year which labour unions believe, on reasonable evidence, to require regulation. The MOL would then be required to explain in a public meeting within a reasonable period of time what kind of action, if any, it would take, and why it was taking such action.

We believe that the above recommendations in total are feasible. They recognize the interdependency of environmental and workplace hazards and of the hazard identification and later regulatory processes; they address weaknesses in current Ontario practices and at the same time the formidable agenda of hazards which society faces in the future; they recognize the differences in each regulatory sector while trying to insure greater uniformity in the general standard-setting processes. Finally, they are based on a recognition that many of the purposes of health and safety regulations are in conflict and can only be balanced rather than totally or finally resolved.

Ministry of the Environment Policy Manual on
Pollution Abatement Program:
Development, Compliance, and Enforcement

Effective February 9, 1981

Legislative Authority

The Environmental Protection Act
The Ontario Water Resources Act
The Pesticides Act

Statement of Principles

This policy describes the Ministry's pollution abatement program. The Policy relates to all sources of pollution requiring the design, approval, delivery and installation of facilities or operational improvement(s). Additional requirements relating to particular sources of pollution, such as Policy 05-03, will be found in other policy statements.

Definitions

Program
Approval

A 'Program Approval' refers to a document describing and approving a schedule of abatement activity submitted by a polluter to the Ministry and approved.

Legislative Authority: The Environmental Protection Act, 1971
Sections 10, 11, 12, 19.

Director
Issued
Order

A 'Director Issued Order' refers to an order or requirement issued by the Ministry which is not specifically covered by other definitions. A Director is any staff person appointed by the Minister for the purposes of the Act.

Legislative Authority: The Environmental Protection Act, 1971, Sections 7, 18, 19, 42, 60, 72.

The Ontario Water Resources Act
Sections 17, 33, 41, 42, 61, 70, 79.

The Pesticides Act 1973,
Sections 20, 21, 24.

Control Order

A 'Control Order' refers to a requirement by the Ministry for specified abatement actions to be accomplished under a given schedule. Such Orders are generally issued as a result of a contravention of Section 14 of The Environmental Protection Act 1971, or a contravention of a standard or regulation. Control Orders include Requirements and Directions issued under The Ontario Water Resources Act.

Legislative Authority: The Environmental Protection Act 1971,
Sections 6, 14, 70, 71, 73, 79.

The Ontario Water Resources Act
Sections 37, 41, 42, 50, 69, 70, 79.

The Pesticides Act 1973,
Sections 13, 21, 22, 23, 24.

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Provincial
Officer's
Requirement

A 'Provincial Officer's Requirement' refers to the authority of a Provincial Officer to survey, collect information and report on contaminant sources. A Provincial Officer is any person designated by the Minister for the purpose of the Act. Such requirements also include the requirement of an employee or agent of the Minister having a similar authority under The Ontario Water Resources Act.

Legislative Authority: The Environmental Protection Act
1971,
Sections 84, 85,
86, 87.

The Ontario Water Resources Act
Section 20.

The Pesticides Act
1973,
Section 17.

Stop
Order

A 'Stop Order' is a requirement by the Ministry for an immediate stop to the addition, discharge or emission of a contaminant either permanently or for a specified period. Stop Orders include Emergency Orders issued under The Ontario Water Resources Act.

Legislative Authority: The Environmental Protection Act
1971,
Sections 7, 12, 74,
75, 76, 79.

The Ontario Water Resources Act
Section 80.

The Pesticides Act
1973,
Section 20.

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Notice
of
Intent

A 'Notice of Intent' is a notice which is served to provide written notification of a Director's intention to issue a Control Order, the reasons for the order and a copy of the report explaining the reasons. This notice must be served at least 15 days prior to the issuance of a Control Order.

Legislative Authority: The Environmental Protection Act
1971,
Section 73.

The Ontario Water Resources Act
Section 79.

The Pesticides Act
1973,
Section 13.

1. Abatement Program
Development Process

1.1. Problem
Definition

The Ministry will begin the development of a pollution abatement program by defining the environmental problem(s).

1.2 Report
Preparation

Where there is a severe, long-standing problem having a large degree of environmental impact, the Ministry will ask the company or person responsible for the problem to prepare a report outlining the technical options available for correcting the defined problem. In preparing this report, the company should address factors such as technical options, capital investments required, operating costs, economic feasibility, socio-economic implications and environmental benefits.

1.3 Commencement
of Abatement
Discussions

Once the report prepared under 1.2 is complete, specific abatement discussions with the polluter will commence. Available financial assistance programs will be thoroughly reviewed and discussed during abatement discussions.

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1.4 Request for
a Program
Approval

Where the polluter agrees to prepare the report and wishes to enter into a Program Approval the Ministry will allow its use only when the following conditions are met:

- (a) The polluter has demonstrated good faith through responsible timely pollution abatement in the past, or
- (b) The Ministry staff are confident of the polluter's intent and ability to implement a Program Approval.

1.5 Program
Approval
Components

The following items will be contained in a Program Approval:

- (a) A clear commitment by the polluter subject only to a 'force majeure' clause acceptable to the Director;
- (b) Signatures of Senior Officers of the polluting firm under corporate seal;
- (c) Assurance that the polluter has the financial capability and has earmarked these funds;
- (d) Staged dates for each item;
- (e) A description of the pollution problem and how the polluter will resolve this by the program;
- (f) A statement that the polluter has investigated the options to its satisfaction and agrees that the proposed remedial project is technically feasible;
- (g) A commitment to supply the Ministry with copies of documents (i.e. purchase orders, designs, contracts with consultants or contractors) as evidence of compliance with the various stages of the abatement program;

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- (h) A statement that the Program Approval is limited in its application to those parts of the plant or those processes or those contaminants specifically referred to in the Program Approval;
- (i) A statement that time is of the essence to achieve the desired results;
- (j) A statement that failure to meet any part constitutes failure to comply with the whole Program Approval;
- (k) An agreement that the Program Approval be made public and, if requested by the Ministry, a willingness to participate in the public process respecting the proposed Program Approval.

1.6 Alternative
Program
Measures

If an abatement program cannot be assured after a reasonable period of discussion with the polluter not exceeding six months then alternative measures will be used to ensure abatement:

1.6.1 Orders
and
Requirements

Director Issued Orders, Control Orders, or Provincial Officer's Requirements may be employed by the Ministry to bring about pollution abatement.

1.6.2 Stop
Orders

Where there is an immediate danger to human life and health or to property, a Director may issue a Stop Order directed to the person responsible for the source of the contaminant. In choosing this course of action, a Director will seek legal advice and obtain the consent of the Assistant Deputy Minister.

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1.6.3
Prosecution

Directors may recommend prosecution as follows:

- (a) In any case where it would be appropriate and just to do so, taking into account all the circumstances, or
- (b) In place of, to supplement or to enforce Orders where, in their opinion, abatement would be successfully achieved more quickly.

1.6.4
Voluntary
Abatement

The normal inspection and complaint investigation activities, followed by voluntary abatement actions, will continue and are not restricted by any of the foregoing points.

1.7 Report and
Review
Made
Public

Where the company or owner has prepared the report referred to in 1.2, the Ministry will prepare a written review of it, and both reports will be made public, subject to the confidentiality of proprietary information.

1.8 Refusal to
Prepare
Report

Where the company or person refuses to prepare the report referred to in 1.2, the Ministry will prepare the report, and both the report and any response by the company will be made public.

1.9 Public
Consultation

After making the company or owner's report and the Ministry's review public as in 1.7, or after making the Ministry-prepared report public as in 1.8, the Director will hold a public information session for significant pollution problems, or for pollution problems that generate high public interest.

1.9.1
Exceptions

Public information sessions will not be held for the following:

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- (a) Orders under Part VII of the Environmental Protection Act, 1971;
- (b) Provincial Officer's Requirements;
- (c) Stop or Emergency Orders;
- (d) Prosecutions;
- (e) Orders for minor pollution problems.

1.10 Receipt of
Public's
Comments

After making the report public as in 1.9, or after holding a public information session, the Director will receive written comments from the public for a period of thirty days.

1.11 Director's
Recommend-
ation

After receiving public comment, the Director will take a course of action.

1.11.1
No
Significant
Alternative
Proposals

If no significant alternative proposals are received in writing by the Director within thirty days of making his decision public, then the Director will sign the Program Approval or issue a Notice of Intent.

1.11.2
Significant
Alternative
Proposal

If a significant alternative proposal is received, then the Director will conduct a second public information session.

1.12 Director's
Decision

If in the opinion of the Director a significant change in the abatement program becomes necessary as a result of step 1.11.2, then he shall proceed to renegotiate the program with the polluter.

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1.13 Revised
Program

Once a revised abatement program is produced, steps 1.5 through 1.12 shall be repeated if so required by the Director.

1.14 Publication
and
Distribution

Information regarding the following items will be available as specified:

1.14.1
Available at
Regional,
District
and Head
Offices

The Notice of Intent, any Program Approval, the Director's recommendation under 1.11, and the Director's decision under 1.12 will be available at Ministry Regional, District, and Head Offices.

1.14.2
Available
at Regional
Office

Written comment from the public, significant alternative proposals received under 1.11.2, and any revised abatement program will be available at the Regional Office.

1.14.3
Notice of
Intent or
Program
Approval

The Notice of Intent or the Program Approval will be published in the local newspapers and the Ontario Gazette, and will be distributed to municipal and other appropriate officials and local libraries.

2. Abatement
Program
Administration

All activities related to Program Approvals, Director-issued Orders, Control Orders, and Stop Orders will be carried out on a project management basis whereby a specified staff person is assigned the responsibility for management of abatement activities.

2.1 Delays Due
to Financial
Constraints

Any significant proposed delays in the implementation of an abatement program due to financial constraints will result in steps 1.5 to 1.12 being taken.

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3. Abatement Program Compliance

3.1 Monitoring

To ensure compliance with Program Approvals and Orders the following activities will be undertaken:

- (a) The polluter will monitor emissions or discharges and the ambient quality of air and water where specifically required by the Ministry.
- (b) The above data will be reported to the Ministry and will be available for review by the public at the local Ministry office;
- (c) The polluter will submit regular status reports(s) on its compliance with the Order or Program Approval;
- (d) These reports (with the exception of proprietary information identified by the polluter and agreed to by the Ministry) will be available for review by the public at the local Ministry office;
- (e) The Ministry will audit Items (a) and (c) above, and carry out any additional tests that may be required;
- (f) The information provided by the polluter may be used for enforcement purposes.

3.2 Enforcement Action

3.2.1 General

Where a polluter is not presently under a Control Order or Program Approval, and there is a potential hazard to the environment, or where there is a discharge of a contaminant to the natural environment, the Ministry may prosecute, seek an injunction, or issue a Program Approval, Control Order, or Stop Order as conditions warrant.

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3.2.2
Where a
Polluter is
Under a
Program
Approval or
Order

- (a) Where a polluter is under a Program Approval or Order and has not essentially complied with the intent of any item in the Order or Program Approval, then the Ministry will prosecute.
- (b) Where a polluter is under a Program Approval or Order and is complying fully with its terms, the Ministry will not prosecute in respect of those items covered by the Order or Program Approval.
- (c) Where a polluter is under an Order or Program Approval and is in violation of items not covered by a Program Approval or Order, and where conditions warrant, the Ministry may prosecute.

3.2.3
Prosecution
by Other
Parties

Where the Ministry has decided not to prosecute a polluter, the Ministry will make information regarding the pollution available to other parties upon request, subject to constraints imposed by legislation.

3.3 Amendments or
Extensions

3.3.1
Increased
Time or
Loading

If the polluter wishes to significantly extend the time allowed in the Order or Program Approval or increase the loading above that specified, such amendments will be subject to the process described previously by items 1.5 to 1.12.

3.3.2
Shorter
Time and
Loading

If the polluter proposes a change with the same or shorter time frame, or the same or lesser loading, the Order or Program Approval will be amended by the Ministry and published in the local newspaper and the Ontario Gazette.

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3.3.3
Short Term
Extensions

When an extension is requested because of matters beyond the control of the polluter, the Ministry may extend an Order or Program Approval on a short term basis and publish the revision in the local newspapers and the Ontario Gazette periodically.

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APPENDIX BRegulation Making Authority Conferred by
The Occupational Health and Safety Act

The Lieutenant Governor in Council is authorized to make regulations:

1. defining any word or expression used in this Act or the regulations that is not defined in this Act;
2. designating or defining any industry, work place, employer or class of work places or employers for the purposes of the Act, a part of this Act, or the regulations or any provision thereof;
3. exempting any work place, industry, activity, business, work, trade, occupation, profession, constructor, employer or any class thereof from the application of a regulation or any provision thereof;
4. limiting or restricting the application of a regulation or any provision thereof to any work place, industry, activity, business, work, trade, occupation, profession, constructor, employer any any class thereof;
5. respecting any matter of thing that is required or permitted to be regulated or prescribed under this Act;
6. respecting any matter or thing, where a provision of this Act requires that the matter or thing be done, used or carried out or provided as prescribed;
7. respecting any matter or thing, where it is a condition precedent that a regulation be made prescribing the matter or thing before this Act or a provision of this Act has any effect;
8. providing for and prescribing fees and the payment or refund of fees;
9. regulating or prohibiting the installation or use of any machine, device or thing or any class thereof;
10. requiring that any equipment, machine, device, article or thing used bear the seal of approval of an organization designated by the regulations to test and approve the equipment, machine, device, article or thing and designating organizations for such purposes;
11. respecting the reporting by physicians and others of workers affected by any biological, chemical or physical agents or combination thereof;
12. regulating or prohibiting atmospheric conditions to which any worker may be exposed in a work place;

13. prescribing methods, standards or procedures for determining the amount, concentration or level of any atmospheric condition or any biological, chemical or physical agent or combination thereof in a work place;
14. prescribing any biological, chemical or physical agent or combination thereof as a designated substance;
15. prohibiting, regulating, restricting, limiting or controlling the handling of, exposure to, or the use the disposal of any designated substance;
16. adopting by reference, in whole or in part, with such changes as the Lieutenant Governor in Council considers necessary, any code or standard and requiring compliance with any code or standard that is so adopted;
17. adopting by reference any criteria or guide in relation to the exposure of a worker to any biological, chemical or physical agent or combination thereof;
18. enabling the Director by notice in writing to designate that any part of a project shall be an individual project for the purposes of this Act and the regulations and prescribing to whom notice shall be given;
19. permitting the Minister to approve laboratories for the purpose of carrying out and performing sampling, analyses, tests, and examinations, and requiring that sampling, analyses, examinations and tests be carried out and performed by a laboratory approved by the Minister;
20. requiring the providing for the registration of employers of workers;
21. providing for the establishment, equipment, operation and maintenance of mine rescue stations, as the Minister may direct, and providing for the payment of the cost thereof and the recovery of such cost from the mining industry;
22. prescribing forms and notices and providing for their use; and
23. prescribing building standards for industrial establishments.

APPENDIX CProcedures Regarding Demolition of Buildings Containing Asbestos*

As per your request I have provided herein Recommended Minimum Procedures for the Protection of Demolition Workers. You will note that these recommendations are very similar to those developed for workers involved with modifications at Toronto International Airport.

I realize that demolition presents a slightly different situation than renovations in a permanent building. However, I feel similar precautions must be followed to ensure workers will be adequately protected from asbestos exposure. In this connection I would like to clarify a few points with the following comments:

1. Unless friable asbestos is removed prior to demolition, all workers involved with the destruction could be exposed to varying concentrations. Also, when the material is taken to the dump the workers at the dump will likely treat the material as general scrap and not be aware it contains asbestos.
2. The asbestos will likely have to be removed one floor at a time or in sections on each floor. This will really depend on the ability to adequately segregate areas, especially those where outside walls have been knocked out.
3. The potential hazards to health associated with the removal of friable asbestos insulation are so severe that the services of specialist contractors and/or the advice of the Occupational Health Branch should be sought.
4. The safety officers should satisfy themselves that all workers have been informed of the hazards of asbestos as well as proper training in the use of personal protective equipment and be familiar with the methods used to prevent fibre escaping from the work area. It is the responsibility of the contractor to ensure that this is done.
5. I have made reference to medical surveillance. However, unless the project is a long term one such as Toronto International Airport the medical surveillance is usually carried out through the local unions rather than at the work site.

....2/

*Source: Ministry of Labour Memorandum, dated May 16, 1980, from D.A. Brown, Occupational Hygiene Service to K. Cleverdon, Construction Health and Safety Branch.

The Recommended Minimum Procedures for the Protection of Demolition Workers are:

1. Prior to the general destruction of a building all friable asbestos insulation shall be removed.

Note:- Friable material is material that can be crumbled, pulverized, or reduced to a powder in the hand. These materials were usually applied by spraying but have also been applied by trowelling.

2. The asbestos removal operations are to be segregated so that adjacent areas are not contaminated with asbestos dust. Two suggestions for achieving this segregation are as follows:
 - First, seal off all openings with plastic sheeting taped securely in place.
 - Secondly, a double barrier of plastic sheeting should be provided at all entrances and exits to the work area so that the work area is always closed off by one barrier when workers enter or exit.
3. A caution sign shall be placed inside and immediately outside the work area. The signs should advise people entering the area of the hazards of exposure to asbestos.
4. The asbestos insulation shall be thoroughly soaked with water prior to removal. If the insulation is not sufficiently saturated with liquid, excessively high concentrations of asbestos dust will be produced during the operation.

It is advised that the wetting agent of 50% polyoxyethylene ester and 50% polyoxyethylene ether be added to the water to enhance penetration.

5. Loose asbestos insulation shall not be allowed to accumulate on the floor after removal operations. It shall be cleaned up using vacuum cleaner (which contains a HEPA filter) or wet mopping and disposed of in sealed containers which have been marked with the warning that asbestos is contained inside. Dry sweeping of insulation shall not be allowed.
6. All of the contractors' personnel engaged in asbestos removal, or at risk in consequence of it, should be provided with full body coveralls, disposable head covers, hoots or sneakers and approved respiratory protective equipment, together with hard hat and protective eye goggles. In this case approved respirator means NIOSH approved (TC-21C) or equivalent approvals such as British Standard Institute Approval.

All respirators and filters shall be stored in a dust free location so that they are protected from exposure to dust prior to their use.

7. All employees entering the segregated work area who are not directly involved with asbestos removal shall wear approved respiratory protection.
8. Workers shall not eat, drink, smoke, chew gum, or chew tobacco in the contaminated area. To eat, drink or smoke, workers should remove their work clothes and footwear in the work area before leaving the work area and proceed to an area not contaminated with asbestos dust.

In addition to the above mentioned point, I would like to further indicate the following:

1. Ideally, a temporary installation should be provided in which workers can in sequence discard their contaminated clothing at one end, shower in the middle section, and don their uncontaminated clothes at the other end. If this is not feasible, then alternative suitable arrangements are to be provided. This could mean a change room and two separate lockers or storage containers so that workers can keep street clothes and work clothes separate.
2. Disposable contaminated clothing should be disposed of with the asbestos waste which should be clearly identified. If the work clothes are re-usable, then arrangements should be made for collecting contaminated clothing in a clearly marked container for cleaning by a separate, carefully controlled laundry facility.
3. Containers of asbestos material should not be dropped out windows or from one floor to the next. Asbestos material should be transported within the building in containers or dust-tight chutes.
4. The medical surveillance program for workers removing asbestos should consist of a pre-placement chest x-ray and pulmonary function test with a follow up in two years.

Note: Any further information regarding medical surveillance can be obtained by contacting the Chief of the Occupational Health Medical Service.

400 University Ave., Toronto, Ontario M7A 1T7
Telephone: (416) 965-3610.

Letter from Ministry of Health to Administrators
of All Public Hospitals Regarding Asbestos

April 10, 1980

TO: ADMINISTRATORS OF ALL PUBLIC HOSPITALS

I am sure you are aware of concerns being expressed about the present and past use of asbestos in construction in Ontario and the possible impact on hospitals.

Since the establishment of the Ontario Hospital Services Commission over 20 years ago, hospital construction has been subject to specific guidelines and the use of non-bonded asbestos and other loose fibres in hospital buildings has been avoided.

This rule initially was designed to facilitate infection control by providing an environment which could be readily disinfected and cleaned on a systematic basis.

These concerns historically have meant that interior surfaces in hospital buildings have been finished with smooth, non-porous surface materials.

While this process normally eliminated the use of non-bonded asbestos, it has been specifically rejected by us over the past 10 years since concern about possible hazards from it has been recognized.

Despite this process, I think it would be useful if you would undertake an evaluation of your facilities to see whether any potential problem exists. To assist you and your staff, I attach a guideline prepared by the Ministry of Labour which describes the uses of asbestos in buildings and sets out procedures to be used for inspection and sampling.

If this presents any problems for you, please let me know so that our technical staff can advise you in dealing with it.

Yours sincerely,

J.R. Hagerman
Director
Institutional Planning Branch



man:
Efan Dupré, Ph.D.
missioners:
aser Mustard, M.D.
ert Uffen, Ph.D., P.Eng., F.R.S.C.
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Royal Commission on Matters of Health
and Safety Arising from the Use of
Asbestos in Ontario

180 Dundas Street West
22nd Floor
Toronto, Ontario
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This study is one of a series being prepared for the Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario during 1981 and 1982. Studies published to date include:

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Requests for further information on publications, or other enquiries regarding the Commission, should be addressed to: Ms. Linda Kahn, Executive Co-ordinator, Royal Commission on Asbestos, 180 Dundas Street West, 22nd floor, Toronto, Ontario, M5S 1Z8 (Telephone: 416/965-1885).

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Additional copies of studies may be purchased in person at the Ontario Government Bookstore, 880 Bay Street, Toronto, Ontario (Telephone: 416/965-2054); or by contacting the Publications Mail Order Service, 880 Bay Street, 5th floor, Toronto, Ontario, M7A 1N8 (Telephone: 416/965-6015).

